Index to Contents, March 1943

(The Annual Index to Contents appears at the back of the December issue each year.)

Billboards
Vermont Billboard Decision ... 91

Buildings, Public
Fire Inspection in Municipal Buildings ... 15
War Department's Pentagon Building ... 44
Site Plan of Pentagon Building ... 45
Old Residence Becomes Community Center ... 85

Business and Industrial Development
Business and Government in the Post-War Years ... 69

Business Machines and Equipment
Municipal Accounting Made Easier ... 107

City Manager Plan
City Manager Appointments ... 87

Civic-Commercial Organizations
Wartime Service of the Honolulu Chamber of Commerce ... 52
To Make Victory Gardens Victorious ... 55
Local Government Is News—XXVII ... 57

Civilian Defense
Wartime Service of the Honolulu Chamber of Commerce ... 52
Local Government Is News—XXVII ... 57
Saga of Minneapolis Defense Council ... 59

Conservation and Salvage
London Saves Water by Rewashering Taps ... 9
Conservation Courses ... 11
Sludge Gas for Truck Power ... 13
Cut City-Vehicle Use ... 15
How Britain Drives for Scrap Metal ... 39
New Wrinkles in Rail Removal ... 47
Ingenuity in Water-Works Design ... 60

Conventions
Conventions—When and Where ... 99

Finance and Taxation
The Cities' $15,000,000 Annual Pump Bill ... 7
Street Cleaning Efficiency ... 11
Price Control on a Wartime Water-Works Project ... 40
Unwise Tax Limitation Laws ... 43
Depreciation of Buildings for Assessment Purposes ... 87
The Municipal Bond Market ... 87
Municipal Accounting Made Easier ... 107

Fire Prevention and Control
Fire Inspection in Municipal Buildings ... 15
Mutual Fire Aid in New York State ... 15
Ordinance to Control Night Club Fires ... 15

Gardens
To Make Victory Gardens Victorious ... 55

Government and Administration
The Threat to NRPB ... 5
America Is Singing ... 56
Business and Government in the Post-War Years ... 69
Post-War Competition Among Cities ... 85
Deferment on Municipal Employees ... 85
To Truly Win the War ... 87

Housing
Requirements of a Sound Urban Redevelopment Statute ... 49

Insurance, Municipal
Yonkers Fire Insurance Cost Down ... 51

Laws and Legal Decisions
Ordinance to Control Night Club Fires ... 15
Unwise Tax Limitation Laws ... 43
Requirements of a Sound Urban Redevelopment Statute ... 49
Municipal Law Notes and Decisions ... 89
Vermont Billboard Decision ... 91

Lighting, Outdoor
Wartime Dimout and Public Safety ... 79
More Light Needed and Coming on Dimouts ... 83
Floodlights for Street and Sewer Repair ... 83

Motor Equipment
The Spirit That Builds Good Municipal Equipment ... 7
Conservation Courses ... 11
Sludge Gas for Truck Power ... 13

Nuisances
Noise Abatement Awards ... 43

Officials and Employees
Deferment on Municipal Employees ... 85

Parking Meters
Taming the Parking Problem ... 64

Planning and Zoning
Small Cities Need Post-War Planning, Too ... 5
Local Planning in Six North Alabama Towns ... 50
Zoning and Planning Notes ... 91
Vermont Billboard Decision ... 91
(See also Post-War Planning)

Police
Honolulu Police Radio Boon to Public ... 64

Post-War Planning
Small Cities Need Post-War Planning, Too ... 5
The Threat to NRPB ... 5
Dubuque, Iowa, Plans for Future ... 9

VOL. LVIII MARCH
No. 3 1943

The American City

Issued Monthly by the
American City Magazine Corporation
470 Fourth Ave., New York

HAROLD S. BUTTENHEIM
Editor
THEODORE REED KENDALL
Consulting Editor
WILLIAM S. FOSTER
Engineering Editor

EDGAR J. BUTTENHEIM
President
ALDEN W. WELCH
Secretary and Research Editor
HERBERT K. SAXE, Treasurer
Major MYRON MacLEOD, Advertising Mgr.
P. C. FORD, Asst. to President

•

BRANCH OFFICES
Daily News Building, Chicago
GEORGE S. CONOVER, Vice-President
Mills Building, San Francisco
Western Pacific Building, Los Angeles
DUNCAN A. SCOTT & CO., Representative

•

Subscription, $2 per annum in United States and Canada ($3 to foreign countries)
Single copies, 35c; Back numbers, 50c

Entered as second-class matter, July 29, 1910, at the Post Office at New York, N. Y., under Act of March 3, 1879.
Printed in U. S. A.

•

THE MUNICIPAL INDEX AND ATLAS, used in connection with the current advertisements in THE AMERICAN CITY, places local officials in the most favorable position to obtain all types of available equipment and supplies from manufacturers who desire to serve municipal government departments—555 pages, published annually by THE AMERICAN CITY MAGAZINE CORPORATION, 470 Fourth Avenue, New York, N. Y.

Post-War Plans for the Bronx ... 13
Public Building to Come ... 35
Pittsburgh's Post-War Program ... 42
First, Win the War, But Be Prepared to Win the Peace ... 48
Requirements of a Sound Redevelopment Statute ... 49
Business and Government in the Post-War Years ... 69
Post-War Competition Among Cities ... 85

Power Plants
Jacksonville Studies Power Developments ... 48
Treated Wood Substation a Permanent Installation ... 109

Public Relations
Honolulu Police Radio Boon to Public ... 64

Publications
New Books and Pamphlets ... 93

Quotable Thoughts
For Your Talks and Reports ... 63

Radio
Honolulu Police Radio Boon to Public ... 64

Recreation
Old Residence Becomes Community Center ... 58

Refuse Collection and Disposal
Street Cleaning Practices in Nine Eastern Cities ... 53

Safety
Conservation Courses ... 11
Danger Zone ... 75
Wartime Dimout and Public Safety ... 79
More Light Needed and Coming on Dimouts ... 83

Sewers and Sewage Treatment
Sludge Gas for Truck Power ... 13
Post-War Plans for The Bronx ... 13
Did You Know That— ... 13
Operating the Easterly ... 37
About . . . Sludge Gas Engines ... 62

Street Cleaning and Snow Removal
Mutual Aid for Snow Removal Work ... 11
Snowfall Chart ... 11
Street Sweeping Feels War Pinch ... 11
Street Cleaning Efficiency ... 11
Emergency Concrete Manhole Cover ... 13
Street-Cleaning Practices in Nine Eastern Cities ... 53
Floodlights for Street and Sewer Repair ... 83

Street Planning and Maintenance
Public Building to Come ... 35
Pittsburgh's Post-War Progam ... 42
The Klondyke Ramp ... 65
Revisions of Asphalt Specifications ... 65
Floodlights for Street and Sewer Repair ... 83

Traffic Control and Facilitation
Brighter Signs for Less Money ... 73
Chicago Saves $200,000 a Year with New Signs ... 75
Danger Zone ... 75
A New Deal for Traffic Signals and Signs ... 77

Transportation
Kansas City PPC Cars ... 7

Water Supply and Purification
Accurate Water Meters Help the War ... 7
Cities' $15,000,000 Annual Pump Bill ... 7
Present Status of Water-Works Chemicals ... 9
New Duties After 50 Years' Service ... 9
Dubuque, Iowa, Plans for Future ... 9
London Saves Water by Rewashering Taps ... 9
Price Control on a Wartime Water-Works Project ... 40
Lowering a Water Main Under Pressure ... 46
Ingenuity in Water-Works Design ... 60
U. S. Water Resources During January ... 71

See pp. 17, 18, 93, 97, 99 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 116

No Rationing of **ACCURACY**

No Limitation on **PERFORMANCE**

WITH

THE *Empire* VICTORY METER

A FULLY PROTECTED IRON CASE OSCILLATING PISTON METER

A FULLY PROTECTED IRON CASE NUTATING DISC METER

THE PITTSBURGH IRONSIDE METER

PURCHASERS of so-called war model meters will find top value in the Empire Victory and Pittsburgh Ironside. The accuracy and efficiency of these meters is every bit as good as that of their bronze case predecessors built during peace-time. There has been no sacrifice made in the quality of the inner working mechanism—where quality in a water meter really counts.

The Empire Victory Meter employs the time-tested, oscillating piston principle of measurement, using the famous Empire balanced piston. The Pittsburgh Ironside Meter is of the popular disc type, having the identical inner working parts that have been so thoroughly proven in thousands of Pittsburgh Arctic and Tropic Meters.

DON'T REPLACE WHEN YOU CAN REPAIR!
Our country's interests come first. An intelligent program of meter reconditioning and maintenance can, in many cases, largely supplant the need for new meters. All Pittsburgh-National meters are economical to repair and replacement part stocks are adequate.

Both of these meters have cast iron cases that are treated, coated and *laboratory tested* to resist rust and corrosion. After the emergency is over, they may be readily converted to bronze cases if desired. Both meters are fitted with the Pittsburgh-National developed molded glass register box which completely encases and protects the register and *provides a clear and undistorted view of the dial* for ease in reading.

Empire Victory and Pittsburgh Ironside Meters are accurate, durable measuring instruments—meters designed not only for war but for wear. They may be purchased with full confidence in their ability to provide the fullest measure of meter value.

PITTSBURGH-NATIONAL METERS

THE MOST COMPLETE LINE OF WATER METERS IN THE WORLD

PITTSBURGH EQUITABLE METER COMPANY

NEW YORK BROOKLYN DES MOINES MEMPHIS OAKLAND TULSA CHICAGO BOSTON

MERCO NORDSTROM VALVE COMPANY
Main Offices, Pittsburgh, Pa.

NATIONAL METER DIVISION, Brooklyn, N. Y.

KANSAS CITY PITTSBURGH SAN FRANCISCO LOS ANGELES SEATTLE HOUSTON COLUMBIA BUFFALO

Small Cities Need Post-War Planning, Too

After victory has been won, will Hometown become a finer or less desirable place in which to live?

For the thousands of hometowns throughout the country, much will depend on the preparations made during the war to control the developments and readjustments sure to follow the war's end. Automobile travel will be resumed and increased; wartime factories will be retooled for peacetime production; building materials and labor will be available for new construction; air transportation may bring great changes in methods and routes of travel; higher standards of public service will be demanded.

Hundreds of Hometown's young men and women will come back from service in the armed forces or from work in war industries. Many of them will be rightly expecting better living conditions for themselves and their families than they had before the war. Many other families, heretofore living in the crowded cities, will be seeking suburban or small town homes.

All of this will mean new home building and subdivision planning; traffic and transportation problems to be solved; increased school facilities; more attention to public health and sanitation; better opportunities for public recreation; and other changes that the post-war years will bring.

In general, Hometown's local officials are running the month-to-month affairs of the community in a business-like way; but most of our small municipalities have as yet no public agency whose duty it is to plan consistently for the years ahead. Hometown needs a planning board to cooperate with its elected officials in controlling future growth.

Zoning Is Not Enough

It is sometimes assumed that if Hometown has a zoning ordinance, there is no need for a planning board. But zoning powers, though very important, are definitely limited. Zoning can control the height and bulk of buildings, the uses to which they are put, and impose restrictions as to minimum sizes of new lots. But zoning cannot control the layout of new streets, the selection of sites for public buildings, parks, and playgrounds, the facilitation of traffic flow, the design of new real estate subdivisions, and the preparation of a master plan for the general guidance of future development. Zoning performs some very important restrictive functions, but it does not do the constructive planning that Hometown will require if it is to gain rather than lose ground in the keen competition among cities that the post-war years will bring.

Most states have laws authorizing municipalities to create a planning board or commission as an aid to the governing body in thinking ahead for the rational development of the community. The Mayor and Council, in adopting an ordinance to create such a planning agency, would retain—as they ought—the ultimate control of the affairs of the municipality, since the enabling acts, as a rule, give the governing body the right to overrule action of the planning board by a two-thirds vote.

Another subject needing consideration by forward-looking public officials and citizens' organizations at this time is the fact that Hometown's housing problem is becoming increasingly acute, especially for our Negro fellow-citizens and other families of low income. Most local building codes are out of date in many respects, and few municipalities have a housing code or health laws which adequately prevent room-overcrowding and the lack of sanitary facilities in old houses. The forward-looking community will not wait until the war is over to begin studying these problems and planning for post-war action on such of them as cannot more promptly be solved.

Are the small municipalities keeping pace with the larger ones in post-war planning?

In four recent issues (November 1942 - February 1943) THE AMERICAN CITY has published replies from leading officials in 212 cities of over 25,000 population in all parts of the United States to a brief questionnaire on post-war planning. All but 18 of these cities gave an affirmative answer to the question, "Has your city begun to plan for post-war public works or other municipal improvements to be undertaken when materials and manpower are available?" We fear that the percentage of municipalities of less than 25,000 inhabitants that can answer "yes" to this question is much smaller than for the larger cities. Information is now requested from places of 10,000 to 25,000 population for future publication.

Will you write us, Hometown, whatever your name and state may be?

The Threat to the National Resources Planning Board

IS it not worth one cent per annum to the citizens of the United States to have an agency in Washington which is constantly thinking and planning, while the war is still on, for the best use of the national resources when the war is over?

Business and industry are widely acclaimed for the forethought they are giving to post-war readjustments. Does not the Federal Government—by far the biggest institution in the country—need to exercise forethought also?

And our state and municipal governments—does not the public interest demand that they continue to benefit by the functioning of a federal agency equipped to serve as a stimulus and practical aid to state-wide and local conservation and development?

THE AMERICAN CITY is certain that the correct answer to these three questions is *Yes*. If our readers agree, we suggest that they can perform a real public service by urging their Senators and Representatives in Congress to restore the $1,400,000 appropriation essential for the proper functioning of the National Resources Planning Board. This appropriation, recommended by the President and approved by the Bureau of the Budget, was deleted from the Independent Officers Appropriation Bill for 1944, as adopted by the House of Representatives last month. The bill is now before the Senate Committee on Appropriations for Independent Offices, which would have the right to restore this NRPB appropriation in the bill before it is reported for action by the Senate.

While we are winning the war, shall we handicap our ability to win the peace by shortsighted "economy" in thinking ahead for post-war readjustments? Such preparedness would be handicapped at national, state, and municipal levels if Congress were to inflict a death blow on the National Resources Planning Board.

DAKAR—WEST AFRICA...

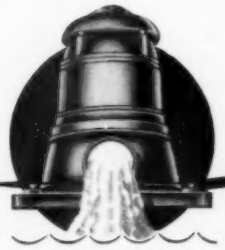
400 Miles South of the Sahara

When our troops swung into Dakar, they found Layne Wells and Pumps on the job, producing millions of gallons of water daily. The Dakar installations had been made under the direction of Layne engineers and are identical with the famous high efficiency, long lasting Layne Wells and Pumps now serving your own local cities and industries.

Layne Wells and Pumps are in use throughout the African War Zone. They were chosen from a field of world wide competitive makes. The reasons for their selection are quite obvious; more skillfully designed, more ruggedly built and more efficient in operation. In war as in peace, their dependability has never faltered.

Tremendous quantities of well water is an absolute war necessity and today hundreds of speedily installed Layne Wells and Pumps are serving aircraft makers, ordnance works, munition factories, chemical plants, ship yards, flying fields, troop training areas and navy yards. Present production is now nearly 100 percent for the war needs, but every effort is being made to keep private and municipal installations in operation.

For literature, catalogs, folders, bulletins, etc., address LAYNE & BOWLER, INC., Memphis, Tenn.



Nation-Wide Service

LAYNE-ARKANSAS CO. . STUTTGART, ARK.
LAYNE-ATLANTIC CO. . . . NORFOLK, VA.
SAVANNAH, GA. . . . . ORLANDO, FLA.
LAYNE-BOWLER NEW ENGLAND CORP.
BOSTON . . . . . MASSACHUSETTS
LAYNE-CENTRAL CO. . . MEMPHIS, TENN.
LAYNE-NORTHERN CO. . MISHAWAKA, IND.
LAYNE-LOUISIANA CO. LAKE CHARLES, LA.
LOUISIANA WELL COMPANY . MONROE, LA.
LAYNE-NEW YORK CO. . NEW YORK CITY
AND PITTSBURGH . . . . . PA.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. . . . . COLUMBUS, OHIO
LAYNE-TEXAS CO. . . . . HOUSTON AND
DALLAS . . . . . TEXAS
LAYNE-WESTERN CO. . KANSAS CITY, MO.
CHICAGO, ILL. . . . . OMAHA, NEBRASKA
LAYNE-WESTERN CO. OF MINNESOTA
MINNEAPOLIS . . . . . MINN.
INTERNATIONAL WATER SUPPLY, LTD.,
LONDON . . . . . ONTARIO, CANADA

The above companies are affiliates of Layne & Bowler, Inc., Memphis, Tenn.

LAYNE PUMPS & WELL WATER SYSTEMS

WORLD'S LARGEST WATER DEVELOPERS

REPAIRS and maintenance of municipal and private industrial Water System should not be neglected. The Layne Organization is endeavoring to service existing installations with necessary repairs and parts. If your wells and pumps need attention, you are urged to write, giving full details of your requirements. No obligation.

Our Municipal Notebook

Accurate Water Meters Help the War

WHEREAS in normal times a city might welcome an increased demand for its services with the attendant higher revenue, in these war days of "preventive maintenance" the greater operations which go with increased sales call for economy measures. For instance, an increased demand for water means more pumping, chemicals, and apparatus wear. In Topeka, Kans., the new air base and general hospital required 1,450,000 gallons per day. Since Topeka's services are 100 per cent metered, this effective method of discouraging waste had already been applied. On the other hand, meters must be maintained, or after 5 to 10 years they may fail to register small flows of ¼ gallon per minute or less. As 11 to 16 per cent of household consumption is at just about that rate, the importance of correct calibration is obvious. Topeka's meter maintenance and testing program calls for the removal of 200 meters per month for testing, repairing, and especially cleaning. The results are that leaks are stopped and the city collects revenues due.

With minimum wastage, the department is in a better position to meet new essential demands without increase in equipment capacity.

The Cities' $15,000,000 Annual Pump Bill

MUNICIPAL government departments buy more than $15,000,000 worth of pumps a year in normal times. The mere replacement business in the 13,000 water systems, 5,500 sewage plants, and 1,000 city-owned electric plants is large. Other using departments are the street, sewer, city engineering, park, fire, and police.

THE MUNICIPAL INDEX lists 25 manufacturers of 28 different types of pumps from the backpack hand-operated Indian fire pump and the 6 gpm John Bean Spray to the centrifugal, turbine well, rotary, and reciprocating types for any condition of head and capacity. Eight of these manufacturers specialize in 2 municipal types; two others in 3 types; eight make 4 to 9 types; six advretise 10 to 15 types; and one furnishes 22 types.

Thus it is a huge market with many suppliers. It is now in wartime status, and what this means is described accurately and briskly in the leading market feature of the water-works section of the new MUNICIPAL INDEX. It is a seller's market in which the municipal customer must take what he can get. If he writes the usual specifications with special or even definite requirements, he is unlikely to get a pump. Fortunately, however, most of the pump manufacturers know not only the size and extent of the municipal market for pumps, but also that it is likely to be the life-saving market after the war. Consequently, business can be satisfactorily transacted in such a market where proper priority ratings have been obtained before approaching the manufacturers. Naturally the highest degree of satisfaction should result from dealing with those manufacturers who understand the needs of the cities and clearly desire to supply them.

The Spirit That Builds Good Municipal Equipment

SOME manufactured products seem more personal than others. Fire apparatus is one of these. A pumping engine or hook-and-ladder truck has always been much more than a mere vehicle. It represents the pride of the fire company owning it and of the department of which the fire company is a unit. To the insurance business and to property owners, it is a symbol of security. To the public, it is sheer excitement. It is noteworthy that there is no low comedy connected with fire trucks. They rarely break down. Their dependability is practically proverbial.

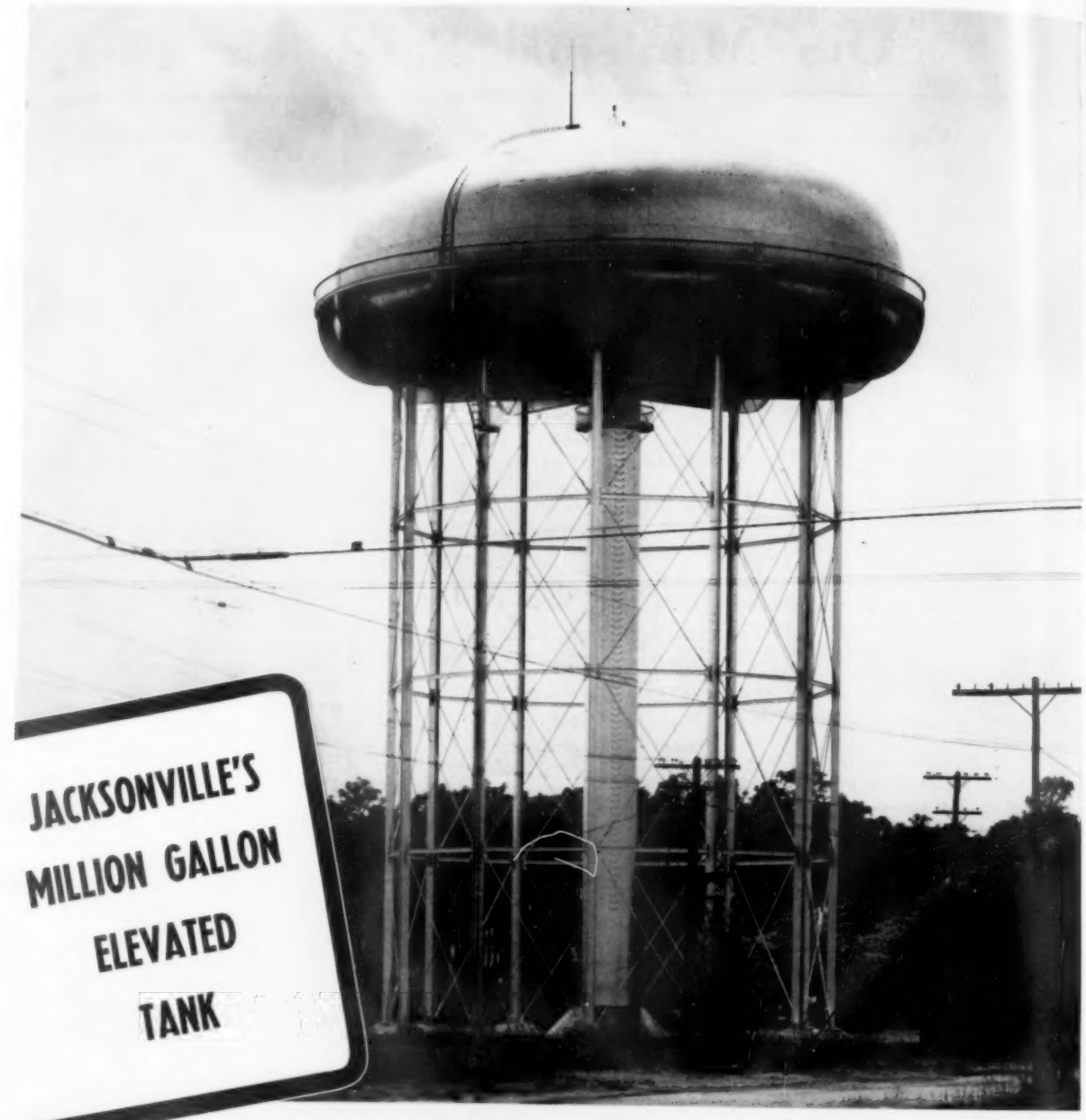
Ask a manufacturer, "how come?" and he will mention "design, materials, craftsmanship," and emphasize the meaning of the third factor. For craftsmanship embraces more than skill with tools. It requires a constructive contentment. Workmen who are here today and gone tomorrow, who are not appreciated, not individualized, can hardly be rated craftsmen.

The employer of true craftsmen will be found to be a considerate manager. A recent letter addressed to the employees of American La France Foamite Corp. by their president, E. E. O'Neill, illustrates the principle of consideration. Mr. O'Neill is proud of the industrious record made by the company during the year. He takes for granted that the employees are proud of it, too. So he lumps the prides together into a total company pride:

> We have met the demands of the Army, the Navy, Maritime and War Industry in a manner that heretofore might have seemed impossible, but no problems seemed too prodigious of solution and no hours of labor seemed too long to make complete our wholehearted contribution to the cause. . . . So, while we look forward with hope and confidence, we must not relax one iota in our efforts to continue the progress which has so effectively been set in motion, and to that end I pledge you full support to the best of my ability, which I hope will merit your continued untiring labor and confidence.

It may be hoped that this spirit is quite general among American manufacturers, because it is the best assurance of continuing post-war prosperity.

Modern PCC cars in Kansas City, Mo., are doing much to speed the transportation of workers in this livestock and meat-packing center.



. . . REDUCES PUMPING HOURS and IMPROVES PRESSURE

WHEN the city of Jacksonville, Fla., completed a waterworks modernization program a few years back, two Horton elevated tanks were erected. One was a 500,000-gal. straight shell, radial-cone type elevated tank, 118 ft. to bottom. This unit was located at the River Oaks substation and has provided adequate and uniform pressure in that area at all times. In addition, the pumping hours at the main north side station have been reduced, due to the storage facilities of this tank.

The 1,000,000-gal. radial-cone design tank shown here was located in the northeast section of the city. This unit, 100 ft. to bottom, with a range in head of 25 ft., boosts pressure and improves service in addition to reducing pumping hours.

Horton elevated steel tanks such as this 1,000,000-gal. unit serve as tributes to leaders in American communities who have wisely planned for both today's and tomorrow's water supply needs.

CHICAGO BRIDGE & IRON COMPANY

BIRMINGHAM • CHICAGO • CLEVELAND • HOUSTON • HAVANA
NEW YORK • PHILADELPHIA • SAN FRANCISCO • TULSA • WASHINGTON

Wartime Water-Works Operation

The Present Status of Water-Works Chemicals

EXPRESSING the opinion that the chemical section of the War Production Board is doing a splendid job and showing fine cooperation on problems that have faced both industry and the municipalities, Mr. H. L. Dahm of G. S. Robins and Co., St. Louis, Mo., outlined before the annual meeting of the Missouri Water and Sewerage Conference, Hannibal, Mo., practical results and reasons for restrictions in the use of chemicals.

Chlorine and related products, although critical, are used so greatly by industry that the small amount required either in water works or in sewerage systems will have litttle effect on the overall situation, Mr. Dahm stated. The greatest contribution that municipal operators can make is to return empty cylinders promptly as soon as a sufficient number are on hand to make a minimum shipment. Extreme care also should be exercised in making connections on the cylinders, in order to protect the valves.

Chloride of lime, Mr. Dahm states, is not as suitable for use by the armed services, as are the hypochlorites, because of its lower chlorine content and instability. As a result, it is available for water treatment and other sanitation uses. This product, however, finds use also as a defensive agent against mustard gas, thereby increasing its possible demand.

Ammonia, Mr. Dahm states, is very short because of the great need for nitrogen products. However, as far as he knows, ammonia is being supplied to water works whenever requested.

Algae control may receive a real set-back because of the shortage of copper for the manufacture of copper sulphate. Plant facilities are ample, but the shortage of the base metal produces complications. The use of activated carbon, developed by W. T. Bailey, Asst. Chief Engineer and Superintendent of the Water Department at Kansas City, Mo., while he was affiliated with the Council Bluffs, Iowa Water Works, and by H. Hartung of the St. Louis County Water Company, offers possibilities to some plants, Mr. Dahm believes.

Dubuque, Iowa, Plans for Future

PLANS for post-war water-works construction have taken definite shape at Dubuque, Iowa, according to A. A. Rhomberg, City Manager. These plans, developed by J. J. Hail, Superintendent, include the following:

1. Install several new deep well electric-driven pumps at Eagle Point Station. (Estimated cost $20,000.00)
2. Construct a 750,000-gallon steel storage tank in the Park Hill District to maintain adequate fire pressure when the 7,500,000-gallon reservoir at West Third and Burch Streets is out of service. (Estimated cost $75,000.00)
3. Install two new pumping units at West Third Street Station to replace the obsolete pumps. (Estimated cost $10,000.00)
4. Raze the remaining section of the Old Building at Eagle Point Station and construct a modern water softening plant. (Estimated cost $135,000.00)
5. Purchase sufficient property between C.M. St. P. & P. R. R. tracks and Rhomberg Avenue, opposite the pumping station for direct ingress and egress. (Estimated cost $9,500.00)

Last year construction on this distribution system was limited to minimum essentials, including a well pump, protective floodlighting equipment, and new Burroughs bookkeeping and posting machines. A small number of feeder mains and cross-connecting mains were installed in various parts of the distribution system.

The Water Department has sufficient value in the sinking fund to more than offset bonded indebtedness. It has a reserve that will take care of many of the minor improvements.

New Duties After 50 Years' Service

City officials at Painesville, Ohio, received a pleasant surprise last year when they were faced with the necessity of relaying a part of their water mains in connection with a grade crossing elimination project. When they uncovered the 900 feet of line in question, they discovered that the entire length of cast-iron pipe was in perfect condition despite the fact that it has been in service for more than 50 years.

Examination of the pipe showed that a large part of the outside tar coating still was intact. The inside of the pipe was found to be free from tuberculation and was coated with a thin film of reddish brown dirt. Under this film, readily removed by brushing, the tar coating was found to be in such good condition that recoating was not deemed necessary.

G. C. Morrison is superintendent of the water department and had charge of the inspection and re-laying of this line.

London Saves Water by Tap Rewashering

ONE of the devices used to cut water use in London has been an extended drive on the part of the Metropolitan Water Board to rewasher leaking taps. According to a report issued by the *Municipal Journal and Local Government Administrator,* the Board has had its own forces rewasher over 100,000 taps. In addition to this, more than 4,000 washers have been given to people to do their own washer repairs.

Water consumption has fallen steadily in London because of conservation measures that the Board has taken. Present flows are an estimated 38 mgd less than in 1938 and 15 mgd less than in 1941. These figures, translated into coal consumed, represent a saving of 57 tons per day over 1938 consumption.

IS WATER your problem?

Water is acquiring new significance as a basic raw material. Many industrial cities have outgrown their present water supply systems. This, coupled with the fact that industrial plants today consume water in quantities sufficient to care for a city of 1,000,000 people, has created an urgent municipal problem.

LIFE in a recent story illustrating the Ranney System of Water Production, stated, "The problem has been solved by the first really new idea in well design since man sank his first shaft." This System produces water in unprecedented quantities and eliminates the expense of filters. One installation of seven collectors yields 65,000,000 gallons daily of clear, bacteriologically pure water. Many vital war industries obtain their water in this way.

Send for this Free Book. Every civic official and engineer facing a water problem will be interested in the new book, 'Water Production for Industrial and Municipal Use.' It contains detailed drawings and photographs illustrating the Ranney principle of horizontal screen pipes projected into the water-bearing aquifer. Write for it today. Address

Ranney WATER COLLECTOR CORPORATION OF NEW YORK

HEYBURN BUILDING, LOUISVILLE, KY.

Street Cleaning and Snow Removal

Using Mutual Aid for Snow Removal Work

STATE mutual aid for snow removal has been in operation this winter in New York State to assist municipalities and county officials in clearing snow efficiently with a limited amount of equipment.

This plan sets up a pooling system of snow-removal equipment using the county as a unit and setting up the County Superintendent of Highways as head. Under this plan, the County Superintendent, when called upon by any municipality within the county for snow-removal aid, will contact officials in other municipalities within his county to furnish such aid if the release of equipment does not interfere with that community's own clearing work. The plan also applies to adjoining counties; if one county can release equipment to another, it does so without question.

According to E. T. Gawkins, Assistant Commissioner, Department of Public Works, the plan is worked out on a state-wide basis as far as possible to keep the roads open to allow defense workers access to their plants, and for the movement of material to and from these plants. The main difficulty, Mr. Gawkins states, is that most municipalities are under-equipped, and the possibility of purchasing new equipment is remote.

Street Sweepings Feels War Pinch

PASADENA, CAL., can attest to the complications that the war has created in street sweeping operations. Since bamboo cannot be purchased for the maintenance of mechanical sweepers, this city adopted the use of bass fibre for a substitute and enjoyed very good results with it. However, it has been restricted also because it is shipped from Africa, and no further shipments can be expected. Mayor A. I. Steward reports that they are now using hickory fibre as a substitute and get from 250 to 300 miles of use from each rotary broom.

Pasadena uses two large Austins, one Elgin model 20, and one Elgin Junior in the sweeping work. These sweepers clean the streets at a cost of approximately 48 cents per curb mile not including depreciation. The city also has hand sweepers that clean places less accessible to the machines, at a cost of $1.40 per curb mile.

This chart, appearing in the bulletin "Snow—Friend of the Enemy," published by Baker Mfg. Co., 503 Stanford Ave., Springfield, Ill., shows the average annual snowfall throughout the United States between the period of 1899 to 1938.

In spite of the higher cost of hand sweeping, city officials find it necessary to use this method to take care of sweeping in the business area where automotive sweepers cannot work because of parked cars. Pick-up work in connection with street sweeping averages 20.31 cents per curb mile for motor sweeping and 20.05 cents per curb mile for hand sweeping.

Conservation Courses

THE New York Department of Sanitation has arranged a series of conservation courses emphasizing the maintenance of motorized equipment which are being conducted in cooperation with the Bureau of Training, a part of the Municipal Civil Service Commission. Those persons connected either directly or indirectly with automotive equipment and safety as operators or in supervisory capacity are eligible to attend.

Subjects discussed include preventative maintenance, rebuilding and salvaging parts, fuel consumption, methods of reducing accidents, driver efficiency, and blackout driving. Specialists who lecture at these courses include engineers from American Brakelock Company, Ethyl Corporation, Gulf Oil Company, General Motors, and Ford Motor Company. Lectures on safety are given by bus company representatives, the Automobile Manufacturing Association, the Office of Defense Transportation, and others.

M. SCHER,
Department of Sanitation, N. Y. C.

Street Cleaning Efficiency

PHILADELPHIA'S record of street cleaning shows what can be done to put this municipal service on an efficient basis.

In 1929 Philadelphia spent $3.54 per capita on street cleaning. This was topped only by Boston, which spent $3.79, and New York with a high of $4.65. In 1938, however, according to a report issued by the Bureau of Municipal Research of Philadelphia, this city had been able to reduce its cost to $1.71 per capita. Cleveland spent only $1.53, and Los Angeles had the low sum of $1.28.

Since 1938 Philadelphia's expenditures have remained substantially the same, although she has actually had more work to perform. The area of the streets has been increased by over 400,000 yards. Increases in dirt to be removed, as well as ashes and rubbish, have been noted.

Philadelphia's reduction in operating costs has been a full 52 per cent during the period beginning 1929. Los Angeles approached this figure with a reduction of 34 per cent in this period.

ENGINES "LIKE NEW"
at Each Oil Change!
When Old Man River gets out of his course, these "Cats" are used to put him in his place, with the help of LeTourneau Dozers.

YOU will get thousands of extra miles of service between overhauls when you lubricate your heavy-duty engines with *Texaco Ursa Oil X★★*.

Texaco Ursa Oil X★★ possesses not only detergency, but *dispersion* properties. Detergency means cleaning engines of old deposits. Dispersion means that carbon and other deposit-forming materials do *not* settle out in the engine, but remain in suspension, draining away when the oil is changed, thus keeping screens and oil-ways clear.

Texaco Ursa Oil X★★ also possesses high film-strength, assuring protection against scuffing of rings and cylinders . . . also protects modern precision-type alloy bearings. Its use assures full power and substantial fuel economy.

For quieter-running longer-lasting transmission and differential gears, use *Texaco Thuban.*

So effective have Texaco Lubricants proved that they are definitely preferred in many important fields, a few of which are listed in the panel.

These Texaco users enjoy many benefits that can be yours. A Texaco Automotive Engineer will gladly cooperate in the selection of the most suitable lubricants for your equipment. Just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

THEY PREFER TEXACO

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated and fueled with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and railroad cars in the U. S. are lubricated with Texaco than with any other brand.

TEXACO

TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Sludge Gas for Truck Power

Is This Economically Sound?

ALTHOUGH the most widely accepted answer to this question has been negative, a study made by the State Engineering Experiment Station at the Georgia School of Technology indicated a more interesting result. Analyzing the use of digester gas from the Clayton sewage-treatment plant at Atlanta, Paul Weber reported that distinct savings could be effected if this method were used as a long-time policy. Mr. Weber, assistant director of the Engineering Experimtnt Station, was studying conditions specifically as they applied to Atlanta and was not attempting to draw nation-wide conclusions. Significant passages from his report are as follows:

"The compressed gas, which is substantially pure methane (carbon dioxide, representing about 30 per cent of the volume, would be previously removed), has a net heating value of 21,600 Btu per lb. Gasoline has a net value somewhat less than 19,000. However, the characteristics of methane are such that a slightly lower efficiency is obtained when burned in an ordinary gasoline engine. . . . Therefore, an assumption is made, which is conservative, that one pound of cylinder gas (methane) is equivalent to one pound of gasoline with regard to truck mileage obtained from the two fuels. . .

"Sixty trucks, traveling an average of 25 miles per day, at 3½ miles per gallon of gasoline, consume daily 430 gallons of gasoline. At an estimated price to the city of Atlanta of 15 cents per gallon, the use of compressed cylinder gas would represent a daily savings of $64.50. On the basis of 300 days per year, the annual savings would be $19,350.

The calculated annual cost of recovering, cleaning, and compressing the sludge gas and delivering it to the trucks as a motor fuel totals $15,734. Therefore, a net saving of approximately $3,600 per year would be realized if about one-half the raw sludge gas were used as a motor fuel in the garbage trucks."

One of the significant features of the study is that this amount of saving can be realized by utilizing only half the available gas. Obviously since the recovery, cleaning, and compressing equipment would be available, the savings could be doubled if the gas were fully used.

Mr. Weber would not have to use such a conservative figure for his sludge gas if he were to take advantage of developments represented by European practice. According to Rene Berg, French engineer and manufacturer, who built plants utilizing ordinary cooking and illuminating gas to drive cars after the German victory, a much better efficiency can be realized if the engine head is remodeled slightly to allow greater compression. On a permanent installation such as the one contemplated at Atlanta, such a change would definitely be justified.

The utilization of gas in stationary engines, of course, offers the advantage of allowing the jacket water to heat the digestion tanks. However, if a plant is not originally built with these engines, most engineers feel that it is generally uneconomical to add them later. Therefore, the Atlanta study discloses another opportunity for the efficient development of a city's sewage-treatment plant.

Emergency Concrete Manhole Cover

TULSA, OKLA., city officials believe they have a better solution to the problem of the manhole cover shortage due to the war than that developed in Los Angeles, where wooden covers are being used.

Officials in Tulsa know that anything which can be moved *will* be moved by small boys—so they have built their emergency covers of concrete which are so heavy they are virtually tamperproof from small boys, but still are light enough for one man to lift, as shown in the picture of Frank O'Brien, sewer superintendent who developed the lid.

The old manhole used valuable cast iron; the Tulsa wartime version uses only one and one-half pounds of chicken wire; the remainder is cement.

BOB VOLLMER.

Frank O'Brien, Sewer Superintendent, removes one of Tulsa's newly developed concrete manhole covers.

Post-War Plans for The Bronx

IN planning post-war construction for New York's famous Borough of The Bronx, sewerage rehabilitation has not been neglected. According to Arthur V. Sheridan, Borough Works Commissioner, over 10 miles of relief and trunk sewer construction are contemplated. Borough engineers are utilizing the most modern design theories in preparing their plans. Work on plans and specifications is well under way, with a substantial part scheduled for completion soon.

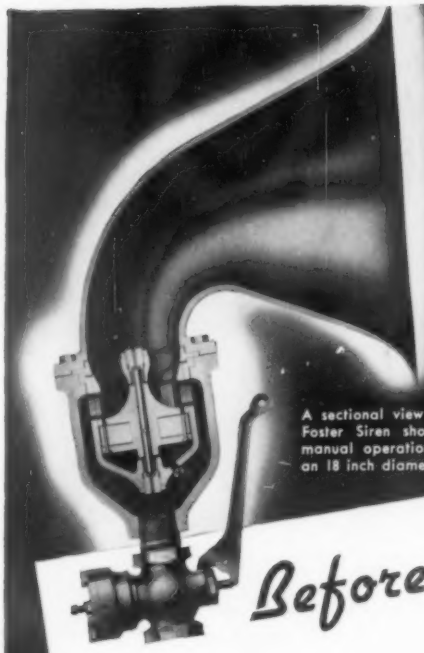
According to Mr. Sheridan, many of the most important sewers of the borough were built from 30 to 70 years ago when the population was small compared with that of the present. Construction adequate for future generations and possible anticipated growths was financially impossible. Furthermore, the less dense population did not produce excessive sewage flows.

Did You Know That—

SLUDGE used as a soil conditioner does not "burn" the grass or crops. Alleged burning is usually caused by over-application of sludge cake, thus smothering the growing blades, particularly if they are young, according to LeRoy W. Van Kleeck, Senior Sanitary Engineer, Connecticut Department of Health. He pointed this out during a symposium on the use of sewage sludge at the 1942 American Society of Civil Engineers annual meeting. According to Mr. Van Kleeck, the nitrogen in sludge comes into action slowly, thus removing the danger of so-called burning.

Mr. Van Kleeck states that he has grown plots of vegetables, shrubs, and grass with and without sludge and can testify to its effectiveness. When used continually it tends to acidify the soil and will require liming every three or four years.

Is your air-raid warning system adequate?



A sectional view of the Type 45 Foster Siren showing valve for manual operation. This size has an 18 inch diameter horn.

Before you order additional sirens . . . Check these points

1 Are they available now?

We have a supply of Foster Sirens *in stock.* And—as they are manufactured of fewer non-critical materials than many other sirens, a correspondingly lower priority is required.

2 Are they sufficiently audible?

The Foster Siren has one of the widest ranges of audibility—one of the highest decibel ratings. The Type 45, for example, produces a sound level of 125 to 130 decibels at 100 feet—and is non-directional.

3 Are they adaptable to existing conditions?

This siren may be manually operated, or you can add a solenoid valve for electric remote control . . . either for separate push-button operation, or tied in as an integral part of an air-raid warning, fire-alarm or other signal or coding system.

4 Are they expensive?

On the basis of "dollars per decibel", the Foster Siren is lower in price than any siren manufactured, according to the latest figures available. The initial cost is not only low, but installation costs are far below those of sirens of comparable audibility.

Send for Bulletin 29

FOSTER ENGINEERING *Company*

PRESSURE REGULATORS...RELIEF AND BACK PRESSURE VALVES...AUTOMATIC STOP AND CHECK VALVES...ALTITUDE VALVES...DAMPER REGULATORS...FAN ENGINE REGULATORS...PUMP GOVERNORS...TEMPERATURE REGULATORS...LIQUID LEVEL CONTROLLERS...FLOAT AND LEVER BALANCED VALVES...NON-RETURN AND TRIPLE DUTY VALVES...VACUUM REGULATORS OR BREAKERS...SIGHT FLOW BOXES...STRAINERS...SAFETY VALVES...SIRENS

133 MONROE STREET • NEWARK, N. J.

Public Safety

Fire Inspections in Municipal Buildings

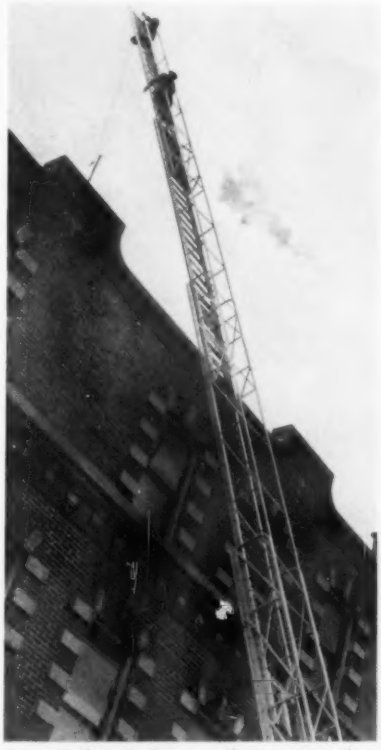
THE protection of publicly owned buildings against fire is particularly important at this time. Municipal administration buildings are the nerve centers of the municipality. Police, fire, municipal services and, in many instances, civilian defense activities are controlled from these centers. These buildings also contain important records that could not easily be replaced.

Many municipal and other publicly owned buildings appear to be more substantial than they really are, and their resistance to fire is commonly overrated. While many have walls of stone or other masonry, the interiors of all the older buildings are of wood construction, and their roofs are too thin to withstand the impact of incendiary bombs. Timber-roof structures, roofs sheathed with one-inch boards, and wood-floored attics containing quantities of stored records and furniture are often found in publicly owned buildings. In other parts of the building, the furniture and equipment are usually combustible, as are the records and files which accumulate in most public offices. While the fire loss in publicly owned buildings is normally low, losses might become very great as a result of war hazards.

The war has brought increased possibilities of loss by fire. Among these factors is the absorption of custodial and maintenance employees by the armed forces and industries. Always present, too, are the common fire hazards and the special hazards that accompany the storage and repair of vehicles, painting, and the various other processes carried on in municipal buildings.

Inspection at frequent intervals is the only way to assure that materials and appliances for extinguishing fires are ready for use. Self-inspections are not intended to replace inspections by fire-prevention engineers of insurance companies, fire-prevention bureaus, or fire companies. They should cover: (a) Care of heating and ventilating equipment during a raid, (b) Shutting off of gas supply when lines are damaged, (c) Maintenance of water supply, (d) Storage of reserve supply of water, (e) Testing of electrical signalling systems, (f) Surveying and recording locations of emergency fire-fighting equipment.

Also, plans should be drafted for a 24-hour fire-fighting service for public buildings. Arrangement should be made for ready entrance, in case of an air-raid alarm, by members of the fire-fighting squad when the building is not open. Self-inspection will provide a continuous check on the maintenance of arrangements, equipment, and materials which should be considered under above items (c), (d), (e), and (f). It will indicate also whether or not custodial employees have the knowledge required to perform the operations in items (a) and (b). The method of making a self-inspection is detailed in a pamphlet issued by the Pennsylvania Government Administration Service, 3437 Woodland Avenue, Philadelphia, Pa.



One of thousands of maintenance painting jobs performed by city governments; firemen painting an American-LaFrance aerial ladder in rear of Central Fire Station, Utica, N. Y.

Mutual Fire Aid in New York State

AS directed by the New York State War Council, State Fire Administrator James J. Higgins has prepared a state mobilization and mutual aid plan which the Council adopted. Chief Higgins maintains records of regional and county mutual-aid plans and inventories of all available fire-fighting facilities. He has the say on the allocation of fire-fighting equipment to communities. One of the first jobs is to see that all apparatus is threaded to take the same standard hose thread. With the approval of the State Director of Civilian Protection, he directs the use of equipment and personnel from any part of the state in case of attack.

When all or part of a municipality's fire force is rendering outside aid, temporary substitute firemen may be appointed and paid at the lowest rate paid the regular firemen, and this cost is charged against the municipality which appointed the substitutes.

Ordinance to Control Night Club Fires

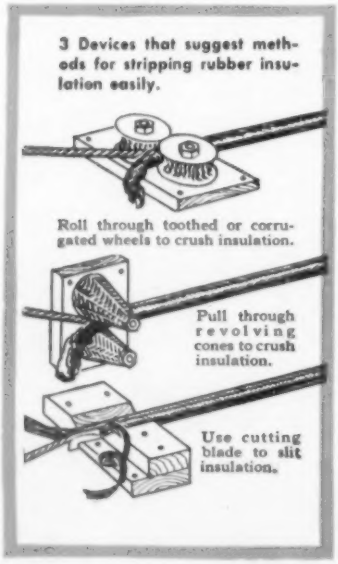
THE most constructive repercussion from the Boston Cocoanut Grove night club fire, which killed 489 persons, as reported in the December issue of THE AMERICAN CITY, is a model "Ordinance Providing for Safety to Life in Places of Assembly," recommended by the National Board of Fire Underwriters, New York. The model ordinance covers decorative materials, stairways, and detailed consideration of exits. Enforcement of such regulations will require frequent inspections by the fire department, even during crowded hours when the ability to use aisles and exits can be seen.

Cut City-Vehicle Use

THE Office of Price Administration has asked the governor of each state to request each mayor to designate a responsible city official as Government Mileage Administrator, to supervise a program for reducing municipal driving. This administrator should survey the real transportation needs of the various municipal departments, in cooperation with the respective departmental heads, and arrange to reduce driving by 40 per cent or more as compared with 1941. He should analyze the public functions requiring driving and should determine which merit a preferred mileage rating and which do not. He should direct the preparation of applications for gasoline and tire rations. Finally, he should insist that all persons driving on municipal business observe the 35-mile-per-hour speed limit. — *The American Municipal Association.*

DON'T!

that Rubber Scrap is Priceless!


3 Devices that suggest methods for stripping rubber insulation easily.
Roll through toothed or corrugated wheels to crush insulation.
Pull through revolving cones to crush insulation.
Use cutting blade to slit insulation.

3189

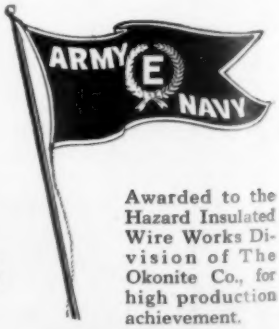
The rubber insulation of wire and cable is even more valuable today than the copper conductor, scarce as copper is! Saving vital copper is absolutely necessary, of course, but the rubber in wire and cable insulation is priceless. The rubber shortage is so acute that immediate corrective measures in both military and civilian life have become necessary. So get into the scrap and salvage both copper *and* rubber.

Hazard cords, cables and insulations have extra years of service built into them. Get these extra years of service by using every precaution for their protection and longevity. But, if they can no longer be used, *strip* off the rubber insulation and sell it to a licensed rubber dealer and sell the copper conductor to a metal dealer.

The scrap you save here and now may later become the difference between victory and defeat on some far-flung battlefield.

HAZARD INSULATED WIRE WORKS
DIVISION OF THE OKONITE COMPANY
Wilkes-Barre, Pennsylvania
Offices in Principal Cities

HAZARD
INSULATED WIRES & CABLES



Awarded to the Hazard Insulated Wire Works Division of The Okonite Co., for high production achievement.

Keep Up-to-Date on New Equipment

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York, and we will see that the catalogs are sent to you without expense or obligation on your part.

3-42

557 558 559 560 561 562 563 564 565 566 567
568 569 570 571 572 573 574 575 576 577 578
579 580 581 582

Name .....Position .....

Address .....

Automatic Valves for Water-Works Protection

557. Literature is available from the Ross Valve Mfg. Co., Inc., P. O. Box 596, Troy, N. Y., describing various automatic valves such as surge relief, altitude, or reducing valves. This literature tells how you can fit this highly important type of equipment into your water system and what economies and safeguards it gives.

Recondition Your Equipment

558. The Allis-Chalmers Tractor Division, Milwaukee, Wis., offers a four-point program for keeping equipment in shape to beat the equipment shortage. This program essentially is to keep the present machines in shape, to repair old machines for standby purposes, to trade in obsolete models for up-to-date used outfits, and to rent and borrow equipment for emergency work. Complete reconditioning service is offered through Allis-Chalmers facilities so that skilled mechanics are able to give competent service.

Keeping Abreast of Meter Developments

559. Literature describing the Pittsburgh Victory Meter and the Ironside Meter gives city officials an indication of the way the engineering and research departments of the manufacturer are keeping production abreast of the times. The company states that further developments are being prepared in their laboratories and design offices. If you do not already have bulletins describing each of these wartime meters and would like to learn of possible post-war developments in the field of water measurement, write to the Pittsburgh Equitable Meter Co., Pittsburgh, Pa.

Maintenance of Small Gasoline Motors

560. Sound conservation measures may be obtained from the Briggs & Stratton Corp., Milwaukee, Wis., regarding the lubrication and cleaning of your existing Briggs & Stratton motors. The unprecedented wartime demands have made it essential for municipalities to conserve these valuable little engines, and this company is anxious to cooperate.

Emergency Pipe Repair

561. Water-works men will find the bulletins on repair sleeves manufactured by the American Cast Iron Pipe Co., Birmingham, Ala., highly instructive. The sleeves are particularly useful during winter months since they expedite emergency repairs in broken mains during the cold weather. The quick use of these sleeves will avoid costly delays.

Road and Street Construction Manual

562. Any city official who is responsible for the construction and maintenance of streets should have the Barrett Tarvia Manual as one of his references. This 64-page book brings together in an organized manner construction and maintenance data for streets constructed of Tarvia. It gives rate mixes, maintenance instructions, and information on how to widen existing roads as well as a valuable list of tables. Write to the Barrett Division of the Allied Chemical and Dye Corp., 40 Rector St., New York.

Air Raid Alarms

563. An informative bulletin entitled "Air Raid Alarm Systems" will be furnished by The Gamewell Co., Newton Upper Falls, Mass. It gives sound and practical instructions on air raid installations. Public alarms for other purposes such as fires also are discussed, and recommended layouts are included.

Marking Traffic Lanes

564. You may obtain from the Meili-Blumberg Corp., Box A-2, New Holstein, Wis., bulletin No. 112 giving useful instructions on this company's Meili-Blumberg traffic marker. It handles any type of striping job, including traffic lines, crosswalks, athletic fields, airports, tennis courts, or playgrounds. It is quickly convertible to an all-purpose paint sprayer extremely useful in municipal maintenance.

Water and Sewage-Treatment Equipment

565. Both bulletins and technical advice may be obtained on water and sewage-treatment equipment from The Jeffrey Mfg. Co., Columbus, Ohio. The Jeffrey engineers have had years of experience on important installations and can offer technical data on both equipment and plant design that you will find extremely useful.

Fire Hydrants

566. Literature furnished by the Mueller Co., Chattanooga, Tenn., gives complete data on this company's Columbian Fire Hydrant that has a healthy service record in back of it as a protective guard against the ravages of fire. A self-oiling top keeps all working parts immersed in a bath of oil. The hydrant cannot stick and the bonnet is always dry. It has a positive protection against the danger of freezing, and if it should be damaged by a car it could be repaired easily and quickly by virtue of the safety flange.

Lamps for City Streets

567. If you have a street-lighting problem that is causing you trouble, you can get scientific and useful cooperation from the Slater laboratories, specialists in design for efficient illumination. This organization prizes its record for cooperation with specialists in cities and municipalities across the country whose work is to provide street-lighting lamps and traffic lights. Write to the Slater Electric & Mfg Co., Brooklyn, N. Y.

Centrifugal Pumps

568. Bulletins are available from the Manistee Iron Works Co., Manistee, Mich., describing the various pumps manufactured by this firm. These include the Manistee single-stage double-suction pumps and also the multi-stage pumps that are able to work against heads as high as 1,600 feet.

Controlling Ice on Street Surfaces

569. You can obtain an authoritative booklet entitled "Highway Ice Control—Methods, Materials, Equipment" from the Solvay Sales Corp., 40 Rector St., New York. From it, you can learn practical uses of calcium chloride in stopping skidding on icy streets, and get valuable hints that will lead you to the saving of time, labor, and money on this essential maintenance operation.

Water-Meter Testing and Repairing

570. The highly informative booklet available from Neptune Meter Co., 50 West 50th St., New York, entitled "Economics of Water Meter Testing and Repairing," should be a "must" for every water-works superintendent. Carefully printed and well illustrated it gives valuable data that will serve as a guide not only during wartime operations but in the post-war period as well.

Installing Underground Pipe by Boring

571. The method of installing pipe by boring is no longer in the experimental stage. If you do not have full details, write to the Hydrauger Corporation, Ltd., Rialto Bldg., San Francisco, Cal. This method requires no ditching, no backfilling, no repaving, or hazards, and is remarkably accurate in its application.

Preventing Rot in Wood Structures

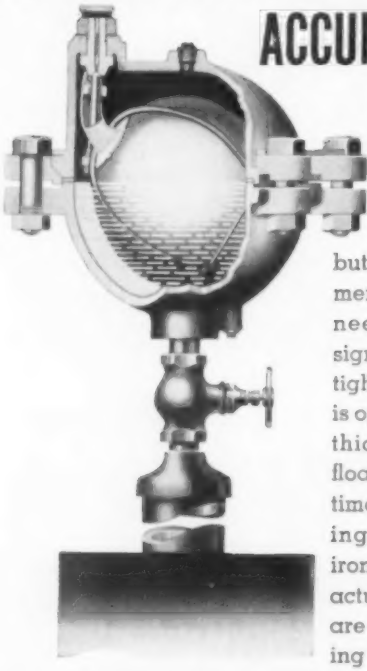
572. City officials should consider it imperative that they have the information furnished by Cuprinol, Inc., 26 Spring Lane, Boston, Mass., regarding the wood preservative that gives lasting protection against rot and insect borers. Wood so protected becomes far more useful in municipal construction during the wartime emergency. This same firm also has information on preservatives for fabrics, roads, and nets.

(Continued on page 18)

IS *AIR SABOTAGING* YOUR PIPE LINES AND PUMPS?

If not removed, air entrained in a liquid or entering the system through leaky joints and pump suctions, may result in serious damage to the pipe line and to the pumping equipment. These air obstructions not only reduce the operating head, but the area of discharge is considerably reduced or entirely cut off.

SIMPLEX AIR RELEASE VALVES AUTOMATICALLY VENT AIR ACCUMULATIONS



THE Simplex Automatic Air Release Valve is of simple, dependable construction, having but one lever movement which operates a needle valve so designed as to be always tight seating. The valve is operated by a heavy thickness glass ball float, tested to several times the service working pressure. A cast iron shell houses the actuating parts which are of corrosion resisting materials.

Standard Simplex Air Release Valve is for working pressures up to 250 lbs. per square inch. The Type "ARA" valve is similar in design but operates up to 1250 lbs. per square inch. Simplex Air Release Valves are being used extensively on lines and pumps for the release of air in water and sewage lines, oil and gasoline lines, and for industrial process liquids.

Write today for further information on the Simplex Air Release Valve — the automatic watchdog to assure continuous peak flow.

SIMPLEX VALVE & METER COMPANY

6789 Upland Street • Philadelphia, Pennsylvania

WHICH OF THESE CATALOGS WOULD YOU LIKE?

(Continued from page 17)

Outdoor Drinking Fountains

573. A folder issued by the Murdock Mfg. & Supply Co., 126 Plum St., Cincinnati, Ohio, describes this company's anti-freeze drinking fountains. This equipment is well known for its fool-proof safeguards against pollution of the fresh water by a clogged sewer through the "Air Lock" principle. The fountain's use out of doors is further enhanced by its freeze-proof construction. It enjoys the complete endorsement of many leading state boards of health.

Cast-Iron Water Meters

574. Cast-iron water meters are no experiment with the Buffalo Meter Co., 2902 Main St., Buffalo, N. Y. For more than 50 years this company has been continuously and successfully building meters with cast-iron galvanized casings. Wartime limitations have not changed any features nor cheapened their quality. Literature furnished by this company describes these meters in detail. Water-works men will find particularly useful the series of bulletins issued by the company describing the accuracy, safety, simplicity, and operating features of the meters.

Frost-Proof Fire Hydrants

575. Bulletins and information may be obtained describing the Mathews fire hydrant that is resistant not only to freezing but also to ground heaving. A built-in dead air space and other carefully designed features make it well suited to cold climates. Write to the R. D. Wood Co., 400 Chestnut St., Philadelphia, Pa.

Pump Maintenance

576. The Peerless Pump Division of the Food Machinery Corp., Los Angeles, Cal., is anxious to help municipal officials plan their maintenance work in order to keep pump shutdowns to a minimum. Repair parts, maintenance hints, and other assistance are available from Peerless dealers and Peerless factories. Literature also will be furnished describing the various capacities of pumps that they manufacture from 10 to 200,000 gpm.

Quickly Installed Electric Power Systems

577. Information in the new booklet published by the General Electric Co., Schenectady, N. Y., entitled "Quickly Installed Electric Power Systems for New Plants and Plant Extensions" will be of considerable assistance to municipal electric plant superintendents by giving them available information on how to assist in the furnishing of power to new industries. General Electric's new factory-assembled unit substations eliminate the slow, costly, detailed layouts that were necessary under previous designs. General Electric engineers point out that the use of this system makes marked savings in critical materials.

Boiler Feed Pumps

578. Worthington Pump & Machinery Corp., Harrison, N. J., has issued a new folder giving full details and specifications for horizontal single-piston-type AC pumps. These compact rugged pumps will operate under a maximum working steam pressure of 250 lbs. per sq. in. Diagrams show the mechanism of the equipment; tables are included that will give the size of the pump required for the boiler horsepower. When writing for this folder, ask for bulletin W-111-B51.

Circular Reservoirs Without Pre-stressing

579. The construction of a circular concrete reservoir without the need for pre-stressing the reinforcing steel is discussed thoroughly by the Portland Cement Assn., 33 West Grand Ave., Chicago, Ill., in its new bulletin entitled "Circular Concrete Tanks Without Prestressing." Design has been carefully analyzed, and the general procedure for the engineer to follow has been facilitated considerably by the preparation of extensive tables and carefully prepared tabulated data.

Pressure Water Filters

580. A new bulletin on pressure water filters has been issued by the Graver Tank & Mfg. Co., Inc., East Chicago, Ind., describing how this type of filter meets rigid requirements for water treatment. The pressure-type filter, it is pointed out, not only provides high efficiency in filtration, but also the means of delivering the filtered water without the necessity of repumping.

Spun Centrifugal Cast-Iron Pipe

581. There is a useful catalog available describing the Warren Spun Centrifugal Pipe made by the Warren Foundry & Pipe Corp., 11 Broadway, New York. This pipe is manufactured in sizes from 2 to 84 inches and will fit a wide variety of needs. The catalog also features the company's threaded cast-iron pipe for filtration systems, sprinkler systems, and similar uses. This type of pipe varies in size from 1¼ to 12 inches.

Selecting Fire Hose

582. How to judge fire hose is the subject of an interesting little bulletin that will be furnished by the Bi-Lateral Fire Hose Co., 20 N. Wacker Drive, Chicago, Ill. It gives concrete information on fire hose construction that will enable you to judge its advantages.

Vol. LVIII, No. 3 The American City March, 1943

Public Building to Come

Post-War Construction Problems Need Wartime Foresight and Courage

By Robert Moses

Park Commissioner and
Member, City Planning Commission
City of New York

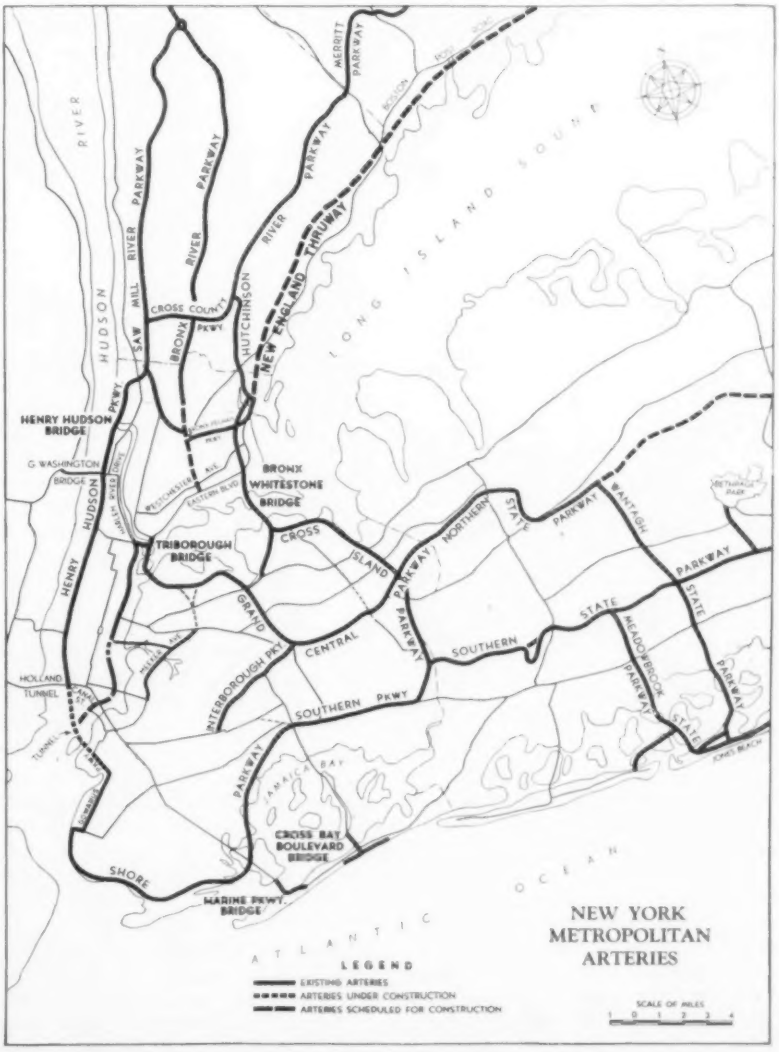
THERE is nothing new in the idea of public works shelves and reservoirs. They have long been advocated and on occasion used to fight so-called periodic or cyclical economic depressions. The Egyptian kings planned their tombs long before they died and took advantage of seasonal and other unemployment periods between wars to have the work done.

Some of those needed to prepare a post-war public works program are otherwise occupied, and those not wholly absorbed in war work feel a natural hesitancy to attack a problem which has little drama and public appeal in these exciting days; and yet the spade work must be done now if anything is to grow later. The main task is to catch up on construction and repair deferred on account of the war. On the other hand, the pursuit of plans for the reconstruction of obsolete or dilapidated areas, for adequate systems of transportation, for decent living and recreation facilities, and for other adequate public services which an emancipated society will demand should require no apology.

We must assume, however, that most of the practical minds are fastened on the winning of the war, and only incidentally on the problems of peace. Few government officials are eager to spend money in wartime to prepare and salt away specifications for future public works. At a time when rationing and priorities are the rule, and people are told to tighten their belts, anything that captious critics and jittery voters may criticize fills the politicians with misgivings. Municipalities pass the buck to the states, and the states to Washington. Washington authorizes agencies ill-equipped for the task to prepare an inventory of likely public improvements, which is nothing more than an endless list of projects, many of them extravagant or fantastic.

A Task for Industry, Labor, and Government

Post-war unemployment is also a headache for industry and labor. Some progressive industries are studying post-war problems. Others are preoccupied, dilatory, indifferent, or secretive. Contractors, most of whose equipment has been taken over by the Federal Government, assure us glibly that there will be plenty of good equipment left after the war, no matter how long the war lasts, although there is little solid basis for such confidence. Small business has no meeting place for such an effort, and American labor, which has never been particularly friendly to research, does not look far enough ahead. The role of government under these conditions becomes more urgent and important. It is primarily to put at profitable work those released from the war effort during the period in which industry is shifting its gears, retooling, adjusting its objectives, and resuming its responsibility to provide work for the



millions who, if a system of free enterprise is to be preserved, belong in private as distinguished from public employment.

How Many Will Need Jobs?

There are various ways, none of them wholly satisfactory, of measuring the scope of needed post-war public work. One method is to subtract the total of normal employment from the total of present employment, and to add to this figure those in the armed forces who will return and insist upon jobs. There are altogether too many complications in this calculation, which adds up to a very high and disturbing figure in excess of what common sense would indicate. There are persons presently employed, many of them women, who need not be employed after the war, and no one knows how fast our armed forces will return to civilian life. A better way to approach the problem is from the angle of unemployment in the last depression. We may assume that at least the maximum number of unemployed in, let us say, the year 1934 must be taken care of in the year after the war by public work while normal employment is being restored, and that this number will begin to taper off in the course of another year.

The Civil Works Administration at its peak employed over 4,000,000 persons. This figure does not include some 800,000 employed on other pump-priming projects, nor does it include white collar workers and unemployables relegated to home relief. In 1934, as New York City Park Commissioner, I inherited about 80,000 relief workers. We devised some 1,800 small stop-gap projects to keep these men busy until we could get together a staff competent to prepare specifications for real work. This staff of 3,000 architects, engineers, and field superintendents, one of the largest design and inspection forces ever assembled in a short time, went to work on real plans, but it was many weeks after the CWA had faded into the TERA before we could establish an orderly procedure.

Contract Jobs vs. Work Relief

In the last depression government agencies also sponsored and spent great sums on public works other than relief projects, some wholly and some partly self-liquidating. All of my experience and personal convictions lead me to prefer sizable contract jobs to work relief, but contracts have their limitations. Contracts are primarily adapted to fairly large projects. They aim at the employment of machines rather than men. Labor saving devices are their visible symbol. On the other hand, their benefits are spread over the whole country, and it is manifestly unfair to measure their effect on employment merely by those working at the location of the job.

A mixed system of contract and work relief under which the contractor is required to employ a majority of his men from work relief or veterans rolls has some manifest advantages and is suited to highway and related construction. One hundred dollars per month per man was the average for each CWA worker, and anywhere from $300 to $400 for each man on genuine major contract work. The cost of a straight contract system to employ all those out of work after the war, at prevailing rates of wages, would break any government. Major contract jobs therefore must be supplemented by small reconstruction and repair projects involving force account and work relief.

It will take a lot of money, federal, state, and local, to prepare detailed plans and specifications for worthwhile post-war public works projects. A number of states and cities are working on the subject. Some of them actually have a substantial number of projects on the drafting boards or completed. Others are approaching the subject in a very gingerly way, confining themselves largely to generalizations, to mere lists of projects for future discussion, or to so-called preliminary plans, which are all right as far as they go but do not serve as a basis for advertising and letting contracts.

The Proposed Boston-Washington Express Highway

Let me give you an illustration of a really important post-war project upon which there has been substantial agreement by those concerned in the Federal Government, the states, and the municipalities. This is the so-called Boston-Washington Express Highway, passing through and not around the principal urban centers on its way, and using where necessary parallel, alternative routes. This artery has been discussed over and over again. Actually its origin goes back to Revolutionary times, and almost any well informed person will recall the trip made by the second President from his home in Massachusetts to the Capitol after he was notified of his election. Actual travel was in a more direct line in those days.

At any rate, we have now reached the stage at which the Federal Government is willing to contribute half the cost of plans. In New York, this artery will be called the New England Thruway. It will begin at the Connecticut line, parallel the New York, New Haven Railroad and the Boston Post Road through Westchester, and run down into the heart of the Bronx where in turn it will tie up with various new and improved thoroughfares leading through the city into New Jersey. Here New Jersey picks up the plan, and so on down to the Capitol.

An Unavoidable Public Responsibility

This is only one of hundreds of post-war highway projects, local and regional, which should be planned at this time by cooperation of federal, state, and local authorities. We must assume that the automobile industry will retool immediately after the war and that it will turn out more cars after this retooling period than ever came off the assembly lines before. These cars will be lighter, they will go farther on a gallon of gasoline, they will cost less, and we are told that they will go faster, which I hope will not be the case. The products of this great American industry are worthless unless government supplies the roads on which they are to run. Private enterprise cannot build these roads. This is an unavoidable responsibility of government and it should be anticipated now. Just as the motor car will be vastly improved, highway construction must also advance, and the latest and best designs tested by war experience must be adopted.

The same logic applies in other fields of public construction where full advantage should be taken of the latest materials, metals, and equipment, and where labor practices should also conform to new, higher, and more liberal standards.

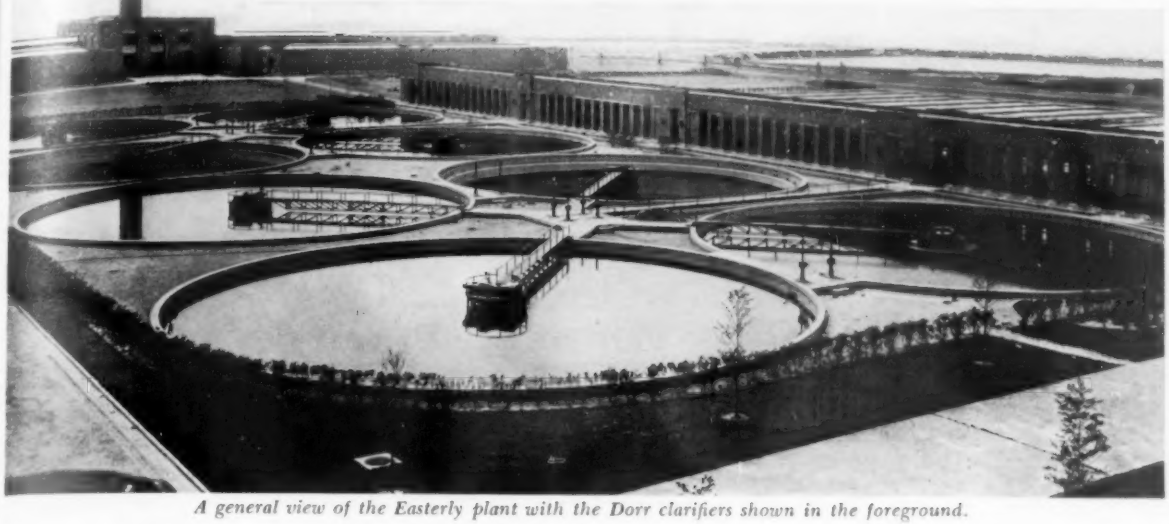
There is no sense in waiting until the war is over before attacking these problems. I do not advocate rejecting, tearing down, and rebuilding everything in the country, nor long-range academic planning of works which do not commend themselves to the average citizen and taxpayer. I ask only that we design now, because these plans will be needed and will create useful employment, projects which in the normal course of events we should have done anyway if it had not been for the war.

A Tough Prospect—and a Tougher

It will, of course, be asked where the funds are coming from for the actual construction. I do not know. No doubt federal, state, and municipal governments must all contribute. Some of the projects may be self-liquidating or partially self-liquidating, some will involve borrowing, and some can be

(Concluded on page 44)

Operating the Easterly



A general view of the Easterly plant with the Dorr clarifiers shown in the foreground.

Cleveland's Largest Sewage-Treatment Plant Tells a Significant Story About the Activated Sludge Process

By JOHN J. WIRTS
Superintendent

SEWAGE-TREATMENT plants are unique members of the public utility field, because their effectiveness can be interpreted only by analytical measurements. Visual observations of results are not always quantitative and do not lend themselves to report work. Unlike water-purification plants, with a healthy and satisfied consumers group as living testimony to efficient operation, the sewage plant can only point to technical figures.

As the relatively pure effluent passes into the receiving body of water, the natural flow carries away the finished product. Therefore, production efficiencies of days past become only a matter of opinion, unless the written record tells the story.

This article presents some significant monthly average measurements for 1941. No attempt is made to give all the supporting figures, although many do represent direct meter readings and laboratory analyses. Interested parties can obtain complete reports directly from the author. These data indicate how the plant operates, what it does, and what results it produces.

Heavy Industrial Load

The Easterly sewage-treatment works, located on Lake Erie, handles the flow from an area accommodating some 770,000 persons. A large portion of this flow consists of industrial wastes from steel mills, chemical works, forging shops, and the like. Besides the expected domestic load of a fairly strong sewage, it is estimated that 5,000,000 pounds of iron, 8,000,000 pounds of oils, and 8,500,000 pounds of acids are contributed by the industries annually. The iron is usually in the form of ferrous sulphate, the oils are a mixture of all types of cutting compounds and fats, including at times some fuel oil. The acids consist of spent pickling liquors and waste plating solutions.

The plant has all the common unit processes of the usual activated sludge plant, that is, preparatory and primary devices coupled with aeration and final clarification. In addition, certain other very important and unusual features are included in the design, because the plant is located adjacent to a first-class residential area.

The plant is surrounded on three sides by single-family dwellings and apartment houses, which means that all operations are visible to the occupants. All buildings within the plant conform to the same pleasing architectural treatment as seen in the accompanying photographs. The preparatory and primary processes are covered and stack ventilated, in order to prevent any unsightliness or odors. Additional insurance for odor control is provided by pre-, intermediate-, and post-chlorination equipment, including provision for the chlorination of ventilation stack gases if necessary. The handling of large quantities of odorous and unsightly screenings is eliminated by the use of Chicago comminutors. This type of equipment represents a real advance in the art of sanitary engineering. It overcomes one of the troublesome, messy, and disagreeable problems that operators have had to meet in the past. All areas surrounding the buildings were graded, top dressed, and landscaped under the original construction contracts. This particular feature was very helpful in establishing good public relations at the outset, because the average layman is prone to smell with his eyes.

Flow Data

As shown in the table accompanying, the average daily raw sewage flow computed on a yearly basis fluctuates between 80 and 90 million gallons, depending on the variation in annual rainfall. This represents metered readings and is accurate to approximately 2 per cent. Metered raw sewage passes through the primary tanks whereas the settled sewage receives complete treatment. The volume of return activated sludge has been increased, by experi-

	Raw Sewage mgd	Settled Sewage mgd	Mixed Liquor mgd	% Return Sludge	Excess Sludge mgd	Air Applied Cu. Ft. Gal.	Suspended Solids ppm Raw	Settled	Effluent	Biochemical Oxygen Demand ppm Raw	Settled	Effluent	Alkalinity ppm Raw	Settled	Effluent
January	88	77	98	29	0.80	0.90	224	160	11.6	137	102	18.9	140	136	109
February	75	68	90	29	0.58	0.98	252	273	8.5	147	120	17.5	152	134	102
March	86	76	96	29	0.79	1.04	...	...	...	...	...	...	...	...	...
April	79	64	80	29	0.81	1.31	279	149	15.6	155	87	20.8	131	118	94
May	84	71	99	41	1.03	1.43	281	172	15.0	153	99	17.6	141	131	80
June	85	82	113	36	1.09	1.07	258	160	9.2	149	102	10.7	123	123	77
July	84	85	114	34	1.17	1.08	259	115	7.3	144	69	5.9	125	111	83
August	86	84	113	35	1.06	1.07	258	106	6.7	139	52	4.7	121	107	39
September	80	79	108	36	0.97	1.25	249	118	9.1	154	70	13.6	133	118	61
October	84	79	104	32	1.02	1.22	264	128	8.8	157	81	12.8	121	104	45
November	77	74	96	30	1.08	1.18	257	173	13.4	184	110	18.2	134	117	66
December	81	76	87	28	0.86	1.17	272	194	14.5	173	117	16.7	126	124	76
Maximum Daily	143	118	157	51	2.62	1.92	612	386	44.8	251	203	30.3	194	180	136
Minimum Daily	41	43	60	22	0.00	0.70	102	38	3.0	80	12	0.9	62	60	12
Average, 1941	83	76	100	32	0.94	1.14	259	160 (38% red)	11.2 (96% red)	154	92 (40% red)	14.3 (91% red)	132	120 (9% red)	73 (45% red)

Telling the story in figures on the amount and type of flow, the treatment given, and the results obtained during operation in 1941

ence gained, from 14 per cent in 1939 to 25 per cent during 1941 and 1942.

Application of Air

The application of air has been closely studied since early in 1939 in order to determine the minimum quantity necessary for good operation. We have found that air applied at the rate of 1.0 to 1.2 cubic feet (50° F. and 29.4 inches of mercury) per gallon of sewage is the minimum that is required to maintain dissolved oxygen in the effluent end of the aeration tanks and to produce some nitrification in the final effluent. Partial nitrification of the effluent by a nitrifying activated sludge is important for two reasons. First, the reserve power in a nitrified activated sludge increases the ability of the process to resist shock loads caused by industrial wastes or storm flows. Second, an oxidizing or nitrifying activated sludge can be concentrated in the primary tanks. This feature is desirable because all the excess activated sludge, plus primary fresh solids and grease, are pumped thirteen miles to the Southerly plant for complete disposal. There are no special concentration tanks for activated sludge at the Easterly site. The primary tanks perform the dual service of concentration of activated sludge and removal of primary solids.

Looking further in the table, you will note that the reduction of suspended solids in the primary tanks averaged 38 per cent and the over-all removal was 96 per cent for the year. Likewise the table shows a primary removal of biochemical oxygen demand of 40 per cent with an over-all removal of over 90 per cent.

Industrial Wastes

A measure of the contributing industrial wastes also is shown. The total iron content of the raw sewage for the year 1941 was over 21 ppm. This is believed to be the highest reported iron analysis in the United States for a plant treating fifty million gallons daily or better. Notice also the consistent reduction in alkalinity due to oxidation in the aeration process. Here the conversion of fats, oxidation of nitrogen, and production of carbon dioxide are carried on continuously.

An Army bomber in the sky and the treatment plant below both furnish protection to Cleveland and the adjoining area.

Bacteria Reductions

B. Coli reductions shown are the usual results obtained. By adequate effluent chlorination during the summer months the reduction is substantially complete. With a dosage of four to five ppm, the residual chlorine in the effluents runs between 0.5 to 1.5 ppm. One and one-half parts per million of residual chlorine is the minimum quantity that will oxidize and destroy the virus of poliomyelitis (infantile paralysis). Consistent bacterial removals of over 99 per cent are easily reached in the activated sludge process with effluent chlorination.

The organization of Havens and Emerson, successors to George B. Gascoigne, designed and supervised the construction of this plant. Commissioner J. W. Ellms is head of the Division of Sewage Disposal at Cleveland.

	Total Iron ppm Raw	Settled	Effluent	ACTIVATED SLUDGE Total Solids ppm	Fixed Solids ppm	Vol. Solids %	Suspended Solids ppm	MIXED LIQUOR Suspended Solids ppm	Sludge Index ML./Gram	Presumptive B. Coli Indicated Number 1000 per ml. Raw	Effluent	% Red
January	17	10	0.8	13370	5090	61.9	12780	2970	60	253	2.40	99.1
February	12	9	0.6	11720	4510	61.5	11080	2610	73	...	....	....
March	..	..	....	13690	5760	58.7	13340	3130	57	...	....	....
April	20	15	2.0	11300	4530	59.9	10700	2610	54	100	0.55	99.5
May	25	12	1.5	6870	2800	59.2	6280	1840	59	80	1.50	98.1
June	29	17	1.0	7860	3400	56.7	7330	2070	51	235	2.39	99.0
July	19	13	0.8	6950	3000	56.8	6360	1670	61	300	2.20	99.3
August	24	14	0.7	7520	3270	56.5	6770	1770	93	295	1.28	99.6
September	15	13	0.9	7940	3240	59.2	7260	1830	112	...	....	....
October	15	14	0.9	8910	3690	58.6	8240	1940	79	253	1.72	99.3
November	22	14	1.4	8200	3250	60.4	7490	1780	65	70	0.55	99.2
December	22	13	1.4	9820	3850	60.8	9090	1930	76	100	1.00	99.0
Maximum daily	75	30	5.2	16730	6660	66.5	15250	3580	135	1000	10.00	....
Minimum daily	2	2	0.4	5150	1980	52.8	4760	1290	45	10	0.10	....
Average, 1941	21.1	13.0 (38% red)	1.1 (95% red)	9510	3870	59.3	8890	2180	70	187	1.51	99.2

Continuing the story on the 1941 operation, notice the high iron content in the raw sewage—an extremely heavy loading for large plants handling all types of sewage.

One small Kent village turned in this tremendous dump of scrap metal. Children carried, women canvassed, and others organized a scrap metal film show and a scrap metal dance on the village green.

How Britain Drives for Scrap Metal

AN ACCOUNT in the issue for last October of THE AMERICAN CITY reached the Publicity Officer of the Ministry of Works and Planning, London—the British Ministry charged with the job of maintaining the supply of scrap metal to British foundries and steel works. He writes:

"I was filled with envy as I read of Nebraska's war trophies, broken machinery, and the like being given up to swell a total collection which reached the truly staggering per head weight of 96 pounds. What rich, virgin soil!

"Throughout Britain is a network of Recovery Officers, each with a small, trained staff, each set to comb his area and send back his quota of scrap metal.

"We have already stripped all the steel from buildings so blitzed as to warrant demolition—that gave us several hundred thousand tons. We have acquired the nation's gates and railings by order—so far, about 400,000 tons of this iron has gone back to the melting pot, and another 200,000 tons or so will soon be gathered. We have dug up old tramlines, scoured our shipyards, organized regular recovery from mines and other industries. Special appeals have been made to farmers. An order has been made for the compulsory disclosure of all metal suitable for scrap in lots of three tons or more. The housewives are organized street by street, by voluntary stewards, to turn out old metal and to save every can. We dismantle disused factories, break up discarded cars. Railwaymen working on the lines bring back nuts and bolts, and pieces of broken coupling. Every source is tapped.

Five Mobile Teams of Scrap-Gatherers

"Despite this systematic drive for scrap, we have yet another method. There are five mobile teams, scouring Britain county by county, covering every acre, calling at every farm, factory, blacksmith, garage, and business. The teams consist each of nine women, one of whom is the leader, and another an expert in publicity. Despite three years' steady flogging, the Devonshire town of Newton Abbott (15,000 souls) nevertheless turned out 126 tons of metal and a considerable pile of rubber the other day. This, at 19 pounds per head, would not compare with Nebraska's 96 pounds, except that Newton Abbott's metal was entirely from people's houses. We have not had time to work out averages, but Devon's average would be increased very considerably taking in the big stuff.

"The Abbot of Buckfast Abbey, for example, gave us a quantity of steel left over after the recent completion of this amazing building. The Benedictine brothers have built this abbey themselves. They began in 1907 and have just finished a beautiful and inspiring edifice. The Royal Navy helped the Devon women's team by digging out of the sand of a certain off-shore island a number of old practice guns, loaded them into barges, and brought them ashore. One farmer gave a century-old threshing engine; the heavy metal base of an old anvil, buried in concrete, was dynamited. Some old German submarines were gifted. An old wrecked ship was blown up and salvaged. In the neighboring county of Somerset a disused railway line, once used by holiday-makers, was dismantled — metals, sleepers, signalling system, stations, halts and yards—and loaded into trucks, rolling back on its tail. The tail finished at a dockside, where the metal was shipped straight across to South Wales foundries.

"We have to work hard for our tonnage, because the ground has been well combed already. Yet we always get a good yield. It is simply necessary to tell people why the scrap is wanted, and out it comes. We talk in terms of war weapons, ask a small town for fifty tons to make two medium tanks, or enough metal for a corvette, or two six-inch guns. This appeal is very successful with the schools, which are of course separately tackled, each being given its target in terms of war weapons.

"Women are used extensively on this work. They are intensely patriotic, make their appeal cleverly, and soon master the metallurgical knowledge necessary. Incessantly traveling, living in suit-cases, they have a hard life but an interesting one.

Price Control on a Wartime Water-Works Project

Tampa, Fla., Saves $167,000 by Careful Engineering and Management on Vital Municipal Construction

By Glenn E. Hands
Resident Engineer
Burns and McDonnell Engineering Co.

THE city of Tampa saved nearly $167,000 in its new vitally needed water-works project. This was made possible by a scientific analysis of the distribution system and the negotiation of a unique construction contract. The savings represent approximately 11 per cent of the entire cost. They were realized in the face of rising costs, labor shortages, expanding needs due to defense projects in the area, and critical shortages of material. This project enabled Tampa to meet the critical demands for more water and better pressures required not only for her vital war industries and military establishments, but also for her expanding civilian population.

The Effect of War

The fine natural facilities of Tampa have been made apparent to the Federal Government for war industries, for airports, and for training centers. When the great lend-lease program was inaugurated, Tampa's existing war industries grew by leaps and bounds, and subsequent developments have continued to expand the city and inflate her population.

The demand for water and for services grew much more rapidly than the normal budget would allow for expansion. Not only were more service mains necessary to serve the growing areas, but more and larger trunk mains were urgently required as well. In spite of the greater volume of water pumped at higher pressures from the main pumping station on the Hillsborough River, low pressures persisted and service became poor at the extremities of the system. Many homes could not obtain water above the first floor, and the nearby military establishment found it necessary to install booster pumps to fill its elevated tank.

The city recognized its problem in ample time, but before construction could begin many financial obstacles had to be surmounted to obtain money for the large construction program anticipated. Legislation had to be passed and bonds had to be sold.

Plans were prepared by the Water Department, and bids on the work were requested before the bonds were issued and the necessary legislation for same was passed. As soon as the funds were obtained, the firm of Burns and McDonnell Engineering Co., Kansas City consulting engineers, was employed to review and study the plans and specifications for adequacy and economy, and to bring them up to date for the new war requirements.

Burns and McDonnell studied the distribution system, using new and highly accurate methods of analysis, and recommended certain economies in pipe sizes that resulted in a saving to the city of $97,235. At the same time the analysis revealed that main extensions in other parts of the system were absolutely necessary to provide adequate service at all hours of the day to all consumers. In addition, the need of more elevated storage on the system and more clearwell storage at the pumping station was made evident.

As mentioned previously, bids already were received, based upon the original plans prepared by city forces, the low bidder was determined, but the contracts were not awarded. In the proposals the city reserved the right to hold the bids for 90 days from date of opening. In that 90-day period provided in the proposals, the bonds were passed, and Burns and McDonnell's studies were completed.

Problems resulting from high water table were overcome by dewatering with Griffin Wellpoints.

Contract Negotiations

Because the defense program was already under way, it was not deemed advisable to re-advertise for bids. It was obvious that the loss of time required in preparing new plans and specifications and receiving new bids would result in a considerable increase in the cost of the project due to the rising cost of labor and materials at that time.

Through the efforts of the Mayor and City Attorney, and with the cooperation of the Board of Representatives, the Chamber of Commerce, and other civic bodies, a special contract

was negotiated with Boyce-Cone and Dawkins, local contractors, to manage, as employees of the city, the construction of the pipe line extensions, their fee being based upon a percentage of the original low bids received with adjustments according to the unit prices set forth in the original low bids. Also, the contractors (acting as construction managers) made a guarantee, supported by bond in an amount equal to about two-thirds of their fees, that the cost of the job would not exceed the amount of the low bids after being adjusted according to the unit prices set forth therein. In addition to managing construction, the construction managers were to furnish all tools and equipment, such as cranes, draglines, trucks, trenching machines, backfilling machines, and tapping machines, required for the construction of the mains.

As a reward for efficient management, the construction managers were to receive in addition to their fee, one-third of all saving in the actual cost of the project below the "Guaranteed Limit of Cost."

Saved Money and Time

This type of negotiated contract, though new and unique in its application, has worked out very satisfactorily. It is reasonable to assume that the very minimum for which the job could have been done under the original contract is $1,545,573. The actual cost of this project, now complete, was $1,441,065—a saving of $104,508, one-third of which went to the contractors for efficient management and two-thirds, or $69,672, remained with the city. In addition, the city saved the cost of the higher bids that would have been received later and the expense of re-advertising.

Another saving that has become increasingly apparent is the time saved and utilized prior to our entry into the war, when the new restrictions on vital materials were put into effect.

Installing a hydrant to strengthen the fire protection facilities

The entire project might have collapsed had the project been delayed as much as 90 days. The city was very fortunate in obtaining most of the vital material before the great strain on war industries was felt. In a few instances, however, it was necessary to obtain high priorities for the materials required to serve the war industries and training centers.

Construction Problems

The construction manager had many problems to overcome. For example, he had to lay approximately half the mains below the water table in a fine sand that flows when saturated. Where progress was necessarily slow and working conditions cramped, the Griffin Wellpoint System of dewatering proved valuable. However, where space was available, it was more economical to excavate with cranes a wide trench a foot or so below grade and to drain the trench with pumps, or by gravity.

One outstanding construction problem was encountered in laying a 24-inch main across the Hillsborough River. The main had to be laid below the grade of future channel improvements, necessitating considerable excavation in rock. The trench for the pipe was excavated under water with a crane mounted on a barge and equipped with a clam-shell bucket.

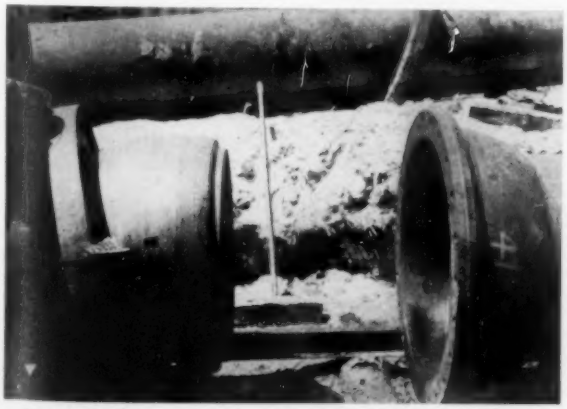
After the trench was excavated, the pipe was drawn into place by using skid rails installed on the west bank where the sections of Molox pipe were assembled. Barrels were attached in sufficient quantity to relieve 95 per cent of the weight of the pipe, and the pipe was pulled across the river by cable. After all the pipe had been installed and before the barrels were released, position of the pipe in the trench was checked by a diver who walked its entire length under water. The pipe was then tested to 50 pounds per square inch with air. After the river crossing was tied into the remainder of the system, the section was again tested by the usual hydrostatic test described above.

Eliminates Vulnerable Spots

More than 100 new Mathews fire hydrants were installed throughout the city improving fire protection and reducing insurance. The hydrants were 4½-inch nozzle steamer hydrants furnished with frost jackets.

Before the improvements were made, a single 30-inch pipe line two miles long connected the water plant to the distribution system. This was considered vulnerable because a failure of this main, either by accident or through sabotage, would throw the entire city out of water. In addition, the 30-inch main was so heavily encrusted that its capacity was reduced over 40 per cent, causing an excessive loss of pressure from the pumping station to the distribution system. Plans provided for a new main, 36 inches in

(*Concluded on page 71*)



A 24-inch line makes an underwater crossing as part of Tampa's water distribution program.

A close-up of the Molox mechanical joint pipe used for this crossing.

Pittsburgh's Post-War Program

By WILLARD H. BUENTE
Chief Engineer
Department of City Planning

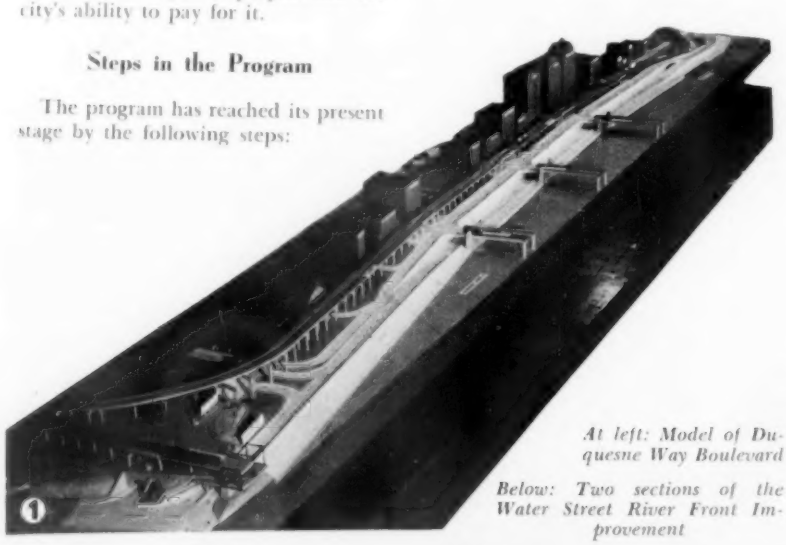
PITTSBURGH began planning for a program of Public Works for Post-War Construction over a year ago, less than two months after the attack on Pearl Harbor. As public matters go, particularly in the first year of a major war, substantial progress has been made in the plans. A satisfactory administrative process has been secured by which each bureau and department can and will submit its program to make up a total city long-range program that can then be put in sequential order for construction in any given post-war year, in relation to the need of a specific project and the city's ability to pay for it.

Steps in the Program

The program has reached its present stage by the following steps:

On January 28, 1942, Mayor Cornelius D. Scully held a conference to discuss a post-war program, at which were present members of the City Council, representatives of the Departments of County Planning, County Works, City Public Works, and City Planning, as well as representatives of the Public Works Reserve and the National Resources Planning Board. The Mayor issued a typewritten statement setting forth his very advanced position in the matter.

During February the Mayor designated the Planning Commission as the agency to prepare both the total program as to sequence and also financial studies to determine the size of the program in each year for several years after the war ends.



At left: Model of Duquesne Way Boulevard

Below: Two sections of the Water Street River Front Improvement

Joint Committee of City and County Planning Commissions

The Mayor arranged with members of the Board of Allegheny County Commissioners, the County Planning Commission, and the City Planning Commission for a joint committee of members of the County and City Planning Commissions to consider city and county projects.

On November 10, 1942, the Mayor submitted his departmental estimates for the 1943 budget and, in his transmitting letter, stated that he would "shortly submit a capital budget providing for present planning for future public works and financed by the accustomed method of financing long-term improvements. . . ."

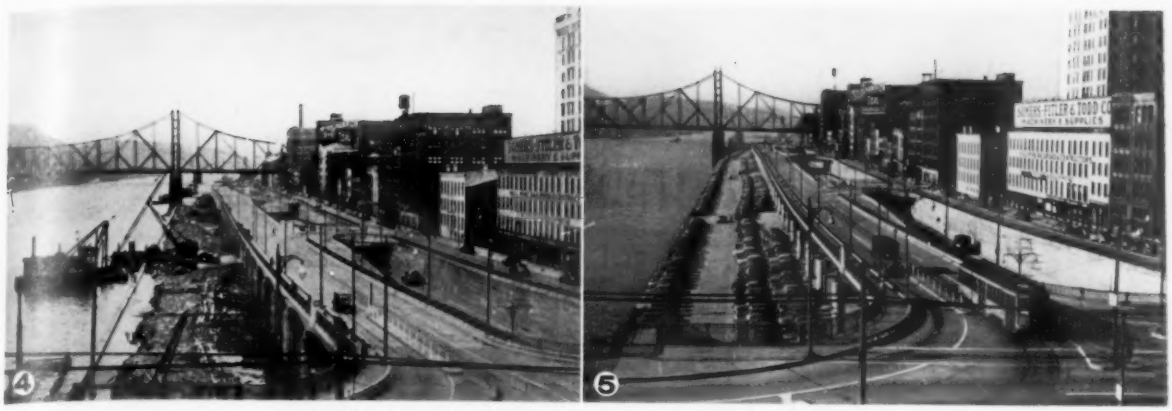
During November, at a joint meeting of the Mayor and City Council with the City Planning Commission, there was under discussion the entire program of current planning of the Department of City Planning as well as the proposed extraordinary planning for post-war construction, which will require an enlarged staff and the allocation of special funds.

Throughout the last twelve months many prospectuses have been prepared by various departments and bureaus of the city and channeled through the Departments of Public Works and City Planning.

Pittsburgh City Council is now considering ordinances to provide funds for the employment of additional staff in the Department of City Planning and the Department of Public Works, where the contract plans and specifications will be prepared.

Major Projects

Plans call for a post-war program of street repaving, set-back of curbs for widened roadways, and street widening. This program, which can be gotten under way quickly, will be greater than usual because of restricted activities during the war.



Parking Space for Water Street Boulevard—Before and After

In addition, some of the major projects will be:

(a) *Urban Redevelopment Plans* of areas determined by depiction of data accumulated by a Land Use Survey extending over the years from 1938 to 1942;

(b) Plans for *National Historic Site* at the juncture of the Allegheny and Monongahela Rivers to exhibit the remains of former Fort Pitt, built in 1759 to 1761;

(c) The recommendation of *Designs for Seven Traffic Interchanges* on the east half of the proposed relocation for national Routes 22 and 30 through the Metropolitan Pittsburgh District, and other work on this route in cooperation with the county and state;

(d) Studies and plans to *Solve the Curb Parking Problem*, particularly in the downtown area—these to include the possibility of city-owned cage-type parking garages, close to the Inner Traffic Loop;

(e) Studies for the *Rerouting of Mass Transportation Facilities;*

(f) Plans for *completion of the Inner and Outer Loops of the Inter-District Traffic Circuit.**

* See map on the front cover of this issue of THE AMERICAN CITY. Certain photographs of completed portions of these loops are pictured herewith, the numbers corresponding with the sites indicated on the cover. Photographs 3, 4, and 5 were furnished by Pittsburgh's Department of City Planning; 1, 2, 6, and 7 are by the courtesy of the Allegheny County Works Department.

The Traffic Circuit Loops

These loops were first conceived in 1921 and were advanced publicly by the City Planning Commission in 1925.

On the Inner Loop, Grant Street was widened and straightened in 1925, 1928, and 1930. A portion of the Water Street (Monogahela Riverfront) Improvement was completed in 1940, and a portion of the Duquesne Way (Allegheny Riverfront) Improvement is nearing completion in 1943.

On the Outer Loop, the Liberty Bridge and Tunnels were completed in 1928; one block of a new street was opened to make North Avenue continuous in 1928; Saw Mill Run Boulevard was built from the Liberty Tunnels to the Banksville Road Circle in 1931; the West End Bridge and approaches were built in 1932; and contract drawings have been completed by the state of Pennsylvania for the construction of Saw Mill Run Boulevard from the Banksville Road Circle to the West End Bridge.

The completion of the Inner and Outer Loops of the Inter-District Traffic Circuit will be scheduled for the early post-war period. Their completion date will depend upon the ability of the city and county to finance them.

Relocated National Routes 22 and 30, coming from the East, are expected to be located along the north bank of the Monongahela River; will connect to Water Street and use Water Street to the point of the rivers; then cross the Monongahela River and pass under the Mt. Washington Hill Top by tunnel to the Banksville Road Circle, thus using one side of the Inner Loop and intersecting twice, the Outer Loop; in so doing, the loops planned in 1921 will be used in the most modern manner for distribution of traffic in connection with two great national routes where they traverse the heart of the Pittsburgh Metropolitan District.

Looking Ahead

As Mayor Scully pointed out in his recent budget message, "The city government will fail in its duties to the people of Pittsburgh should it let these war years go by without concern for the future, when far-reaching post-war readjustment must be made."

The municipal administration and the Department of City Planning are determined that such failure shall not take place.

West End—North Side Bridge

Liberty Bridge

Unwise Tax Limitation Laws

A REVIEW of the effects on municipal government of over-all tax limitations, and a presentation of evidence that such measures constitute a negative approach to tax reform have been made available in pamphlet form by the American Municipal Association.* The author, G. M. Morris, summarizes his conclusions as follows:

"The movement for over-all tax rate limits is essentially the product of a well-organized and articulate group of real estate operators and property owners aimed at a single objective—relief from real estate taxes at any cost. The scheme does not bring about important governmental economies or lasting reductions in the total tax burden, but rather so disrupts public finances and services as to threaten the existence of local government. A uniform, inflexible limit deprives the fiscal system of the flexibility required for adaptation to changing social and economic conditions, and fails to allow for differences in community needs and community resources. Although some replacement revenues may be eventually found, the immediate effect is reduction and substantial curtailment of essential governmental services. Over-all limitations seriously injure municipal credit. In the long run, the effect on local governmental finances is cumulative as a result of postponement of capital improvements, curtailment of maintenance, increase in operating deficits, and devious methods of financial operations forced upon public officials.

"All the purported objectives of the proponents of tax limitation have been achieved in a number of states without the resorting to tax limits and its attendant disastrous effects upon local governments, particularly municipalities. Proponents of tax limitations propose to limit income from a particular source and thus solve by indirection the problem of increasing expenditures of public funds. Similarly a man may be taught to write with his left hand by cutting off his right. If economy is the object it should be approached directly rather than indirectly. To attempt to promote economy by tax limitation is to 'foment a tax strike in euphonious disguise.' Curtailment of services and increased future taxation are the products."

* See page 93 of this issue.

Noise Abatement Awards As War Contribution

IN the interest of manpower conservation and as an aid to war production, the National Noise Abatement Council plans to make four awards this year for outstanding civic achievement in the reduction of needless noise.

An award will be given the city in each of four population groups which submits on or before July 1, 1943, the most convincing evidence of accomplishment in the elimination of unnecessary street noise and the control of noises in industry, offices, and the home during the period June 7, 1942 to June 5, 1943, and in the observance of National Noise Abatement Week, May 30 to June 5, 1943.

"We know that excessive and unnecessary noise is a definite deterrent to the war effort," said Sam L. Hooper, President of the Council, "especially when it occurs in war industry, in offices engaged in executive and clerical work incident to war production, and in or about homes where war workers live and must get essential sleep and rest."

Cities wishing to compete for the award in their group should contact the Committee on Awards, National Noise Abatement Council, 9 Rockefeller Plaza, New York, N. Y. All cities or towns are eligible.

Public Building to Come

(*Continued from page 36*)

paid out of current taxes. I admit that these bills will be presented to the taxpayer at a time when we are beginning to liquidate a tremendous war debt.

It is a tough prospect to face, but there is one prospect which is much tougher. That is the prospect, and I might say the inevitability, of a tremendous, wasteful, and debilitating relief program hastily devised, badly conceived, poorly executed, and enormously expensive. We have got to face these two alternatives for a period of about two years after the war, and we can't safely assume that private enterprise can meet the problem in this period. It gets down to public works or straight relief, and I think all sensible people will concede that the least we can do now is to get ready for public works.

—From an address before the Conference of Highway Officials of the North Atlantic States, February 17, 1943.

The War Department's Pentagon Building

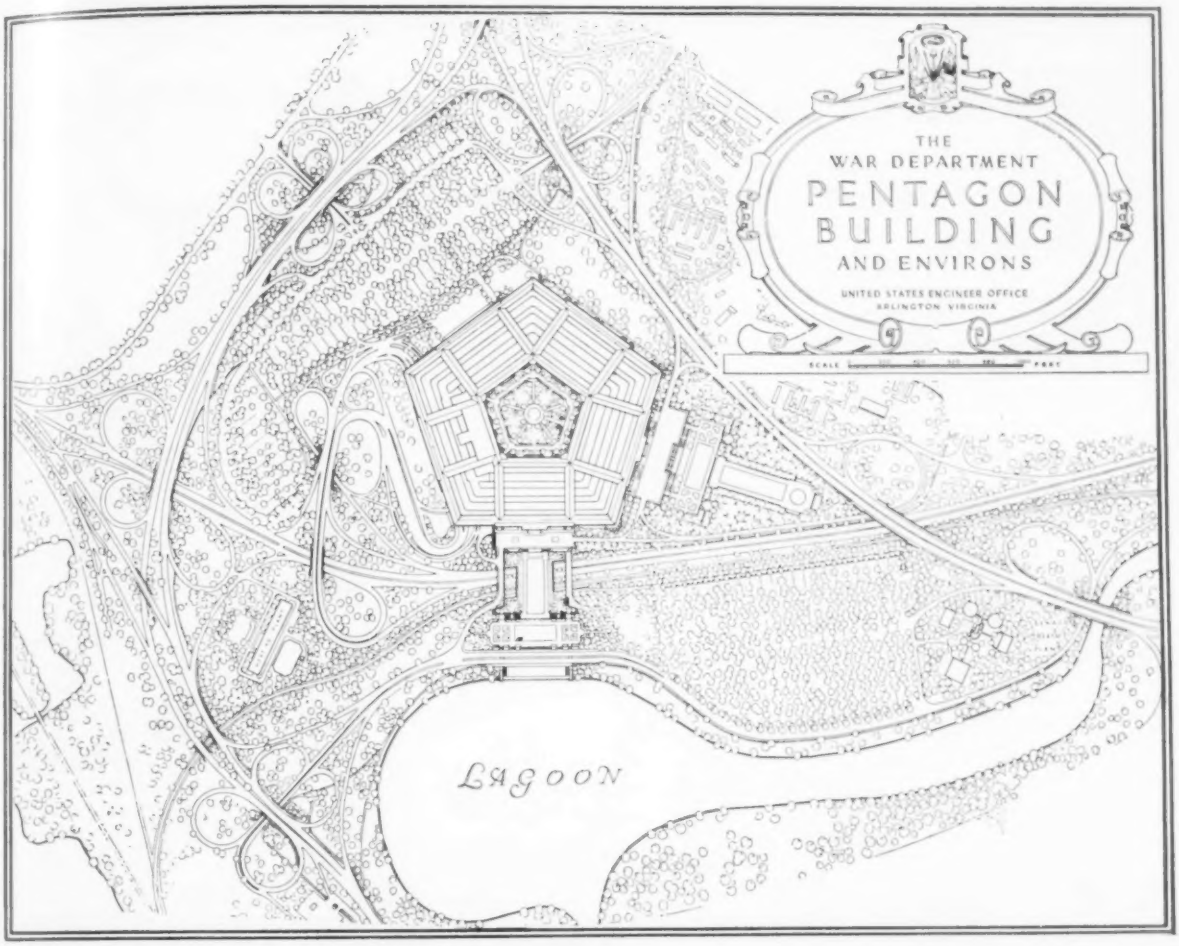
"EVEN Washington, surfeited with bigness in all its forms, is impressed by the Pentagon Building, and with good reason," says *The Architectural Forum*, in a 15-page, handsomely illustrated article, in its January 1943 issue, the introductory paragraphs of which follow:

"The Pentagon is not big—it is super. It is the largest office building in the world. Its population is staggering (40,000 capacity). The equivalent of a small city sits down to lunch in its cafeterias every day. A truck road winds unseen through its bowels. And even Washingtonians, long habituated to miles of labyrinthine corridors, finds it large enough to be confusing.

"For so important a building, the Pentagon was designed in a rather curious way, and equally odd is the manner in which it got its name and shape. About the building's exterior, the less said the better: in essence it is the official Washington front, stretched thin to cover 4,600 running feet of facade. It is presented here because a building so enormous takes on an entirely new quality of interest and excitement, a quality which depends not on the "architecture" but on its size and the problems that go with it.

"One thing that happens when a building for 40,000 people is put up, appears in the model photograph: a fantastic network of roads, cloverleafs, underpasses and overpasses. This influence is not confined to the site, generous as the 400-acre site happens to be. For miles around the results of building the Pentagon are visible: the reclaimed slums, the broad roads, and the new, integrated approaches to the capital. Perhaps the greatest lesson of the Pentagon is here: as building approaches the scale technically feasible, the distinction between architecture and city planning vanishes. Despite its shortcomings, the Pentagon give a real foretaste of the future."

Site Plan of the World's Largest Office Building



PLAN BY COURTESY OF A. D. TAYLOR, LANDSCAPE ARCHITECT

PHOTO BY A. SCHUSZLER

Plan and model showing network of roads, cloverleafs, underpasses, and overpasses

Lowering a Water Main Under Pressure

Ice Blocks Used to Lower a Key Supply Main Beneath New Street Grade in Augusta, Ga.

WHAT would you do if you discovered that you had to lower 300 feet of cast-iron main leading from your storage reservoir to the filter plant and you knew that you had to leave the main in operation? That is the problem that faced John Twiggs, Assistant City Engineer of Augusta, Ga., last summer and this is the way he handled it.

Specifically, he had to lower the main a maximum of 26 inches at one end and substantially nothing at the other without disturbing the filter-plant operation. The main was under 22 pounds pressure and laid on a general 3 per cent grade. On leaving the reservoir it ran in a southeasterly direction to a 45 degree ell and thence in an easterly direction to the filter plant.

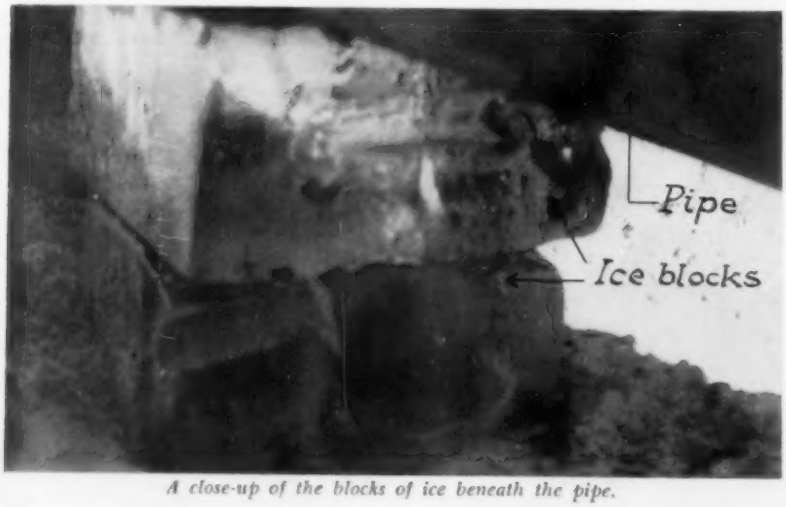
Used Method Previously

Mr. Twiggs concluded that this operation would not alter the length of the line enough to make any difference. Consequently he pulled out of the bag an old trick that he had used previously under difficult conditions and decided to lower the main by the use of ice blocks. He stated that he used this method as far back as 1918, but never before has he had occasion to use it on water mains.

In performing the work, he directed his men to excavate a trench to the required grade, leaving a three-foot plug of earth under each bell. A 200-pound block of ice was then placed under the middle section of each length of pipe with the bottom of the ice block approximately two inches below grade. Workmen then gradually removed the dirt from under each bell simultaneously until the ice was seen to carry the load. From then on the sun did the balance of the lowering work.

Operations started at 9 A.M. and were completed at 8 P.M. The highest temperature recorded was 94 degrees. The work required the use of 3,900 pounds of ice. No leaks occurred in the entire line, although precautions were taken to drive up the lead joints before backfilling the trench.

The trench was excavated to the required grade with mounds of earth left beneath each joint. Ice was placed at the midpoint of each pipe and the remaining dirt was gradually removed.



A close-up of the blocks of ice beneath the pipe.

Water Works Recently Improved

Augusta's water-treatment plant and pumping station was enlarged and rehabilitated in 1941 at a cost of nearly $500,000. The principal equipment that was installed during this construction period consisted of two new Dayton-Dowd centrifugal pumps each having a capacity of 5,000 gpm and driven by 700-hp water wheels. Four electrically driven centrifugal pumps had been installed previously, two with a capacity of 4,200 gpm, and two of 3,600 gpm.

The plant has 133 miles of cast-iron water mains and affords a supply for nearly 15,000 customers as well as important military establishments.

Ernest E. Pund is City Engineer for Augusta. M. B. Cooper is the superintendent of the Water Works.

New Wrinkles in Rail Removal

Hartford, Conn., Uses a Pneumatic Hammer to Speed Removal and to Lower Costs

WHEN Hartford started its rail-removal program last summer, City Engineer Robert J. Ross decided to authorize the use of a relatively new method that has been enjoying a great deal of popularity among Eastern municipalities. This method involves the use of a powerful pavement breaker that loosens the rails from the concrete bed.

Hartford had about 490,000 lineal feet of trolley rails in the streets that were not being, and could not be, used in any practical scheme of street-car transportation. These were 125-pound rails 9 inches deep. The majority were on improved paved streets, surfaced mainly by sheet asphalt or granite block, and with a 6-inch concrete base. On certain of these streets the rails only needed to be channeled out and the pavement, disturbed by the rail-removal, repaired. However, a good portion of Main Street had to be entirely resurfaced.

Three contracts were required for this salvage job. The first was awarded by the government through WPA and called for breaking out the pavement along each rail to the top of ties; cutting the rails into 10- and 15-foot lengths; removing rails, spikes, and similar material to a designated shipping point in Hartford; and cleaning and preparing the resultant strips for laying of new pavement base and wearing surface.

Subsequently the city awarded two contracts, one for resurfacing a section of Main Street one mile long, and one for restoring the paving disturbed by rail removal on other streets.

Breaking Concrete

The breaking of the channel alongside each rail was awarded as a separate sub-contract to the Ace Concrete Cutting Corp., Brooklyn, N. Y. The principal equipment was a pneumatic hammer powered by a truck-mounted Schramm 220 (acutal) pneumatic compressor. The hammer for this type of work had a three-inch face and was capable of delivering 60 blows per minute at an estimated pressure of 10,000 pounds per square inch. The machine would cut about a 9-inch trench and strike a blow on the rail itself in order to jar it loose and break its bond with the adjoining slab. One crew could break out a maximum of 2,000 feet per day when operating conditions were favorable.

The blows were strong enough to shear the concrete rather than to shatter it and weaken the adjoining slab. The machine cut the pavement to a sharp, distinct line and reduced the concrete practically to its original aggregate, making subsequent disposal easy. This sharp, shearing impact also did no damage to the underground utilities as often is the case when the concrete is broken by a heavy, crushing blow. The sub-grade also remained undisturbed.

This type of equipment was first used on highway-maintenance work breaking out sections of slab for the purpose of installing signals or other devices. It also has had extensive use for installing traffic dividers on certain of New York's parkways.

Procedure

The work consisted principally of the following steps:

- Removal of the 3-inch asphalt wearing surface about 9 inches wide by the use of pneumatic asphalt cutters;
- Breaking the 6-inch concrete base with the pneumatic hammer;
- Cleaning out the broken paving and pulling spikes;
- Cutting and removing the rails;
- Restoring the base and resurfacing with asphalt.

Hartford experienced some difficulty in obtaining the asphalt required for the work. However, release was obtained since the road is a vital route leading to important war factories and is essential for the transportation of troops. Moreover, the fact that, through the work, badly needed scrap steel became available, had its influence.

The asphalt surfacing conformed closely to specifications followed in

The first step was to remove the 3-inch sheet asphalt surface preparatory to cutting a channel next to the rail.

A channel was opened adjacent to the rail by the use of this powerful pneumatic hammer. A skilled operator can deliver 60 directed blows a minute. He also can break the bond between the rail and the concrete.

With the trench prepared and the rails loosened, it was a relatively easy job to remove them and cut them to suitable lengths preparatory to shipping.

Hartford for a number of years. It consists of 1½ inches close binder and 1½ inches of surface mixture laid on the concrete foundation. The binder is composed of crushed trap rock, none larger than ¾-inch, about 25 per cent sand, and about 6 per cent asphalt cement of 60-70 penetration. The top mixture is composed of 76½ per cent of suitably graded sand, 13 per cent air-floated stone dust, and 10½ per cent oil-residual asphalt cement also of 60-70 penetration. These ingredients are mixed in 1,000-pound batches in a Barber-Greene pug-mill mixer at the asphalt plant. The hot mixes are hauled to the street, raked into place by hand and compressed with tandem rollers.

The general contract for paving replacement in the rail channels amounted to about $235,000, and the rail salvage return was estimated at

Patching the damaged surface with concrete. Asphalt surfacing was supplied following this operation, making the street completely serviceable.

$118,000 or about half. The contract price for the asphalt surfacing work was $1.35 per square yard, which totaled about $80,000. The engineers estimate that approximately $8,000 can be realized from the salvage of the rails in the Main Street work.

Personnel

All work was performed under the general supervision of Robert J. Ross, City Engineer. The pavement mix was designed by Arthur J. Schoenfuss. Engineering and inspection was in charge of H. I. Skilton, paving engineer. Both men are in the department of engineering.

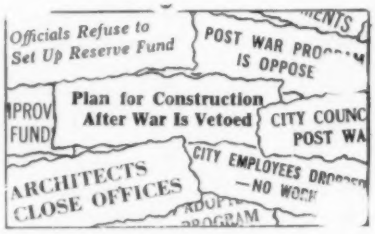
The Edward Balf Co., Hartford, held the contract for resurfacing and paving replacement in the rail channels, and also the sub-contract for rail removal.

First, Win The War, But Be Prepared to Win The Peace

WITH this challenging phrase as its slogan, the League of Wisconsin Municipalities is reiterating to its member cities and villages the urgent need for wartime preparedness for peacetime public improvements.

Readers of THE AMERICAN CITY (page 48, December, 1942) will recall the reprinting of a page on this subject from *The Municipality*. That magazine has presented in its issue of January 1943 another striking page, a portion of which is here reproduced. Asking "What are today's headlines in your newspaper?" the League points out that:

If municipal officials are so lacking in foresight that current headlines read thus:



Post-war headlines such as the following will be all too probable:

Public Works Retarded—Citizens Condemn Council for Lack of Foresight
Relief Load Mounts Tax Increase Seen
Failure Adopting Post War Plan Embarrasses City Officials
STREET IMPROVEME
FLAG—NO FUNDS
Woman's Club Criticizes Council
Unemployment Increases—Factorie
Lay Off 200 Me
286 EX-SOLDIERS NEED JOBS

BUT

If they are similar to the following:

City Invests Surplus in War Bonds
Engineer Prepares Sewer Plans
CITY COUNCIL ADOPTS POST WAR PROGRAM
Municipal Reserve Fund for Post War Construction
Architect Plans Addition to City Hall
EMPLOYEES DROPPED

Chances are that after the war they will read as follows:

Post War Construction Program Starts—400 Ex-Soldiers Put to Work
CONSTRUCTION STARTS ON STORM SEWER
NO INCREASE IN TAX LEVY
Unemployment Reduced Factories Increase Payroll
Construction Starts on City Hall Addition

"Our first duty now is to speed war production. But when peace comes we must be ready with sound, constructive projects to provide jobs for our fighting forces and war workers. Industry must do the major part, but municipalities can help by replacing worn out streets . . . extending sanitary and water systems . . . developing flood control protection . . . expanding parks and playgrounds . . . building schools, auditoriums, hospitals, and other necessary projects.

"Many Wisconsin cities and villages are now formulating definite programs of future public improvements. Such advance planning insures sound engineering and maximum economy."

JACKSONVILLE STUDIES POWER DEVELOPMENT

JACKSONVILLE, FLA., has applied to the War Production Board for authority to purchase an additional boiler so that their steam generating facilities can be enlarged to accommodate increased wartime loads. Also, a study has been made to eliminate certain vibrations of the induced draft fan arrangement, according to George A. Pierce, Commissioner of Public Utilities. Burns and Roe, Inc., New York, engineering consultants, have been retained to make the necessary investigations.

On June 20, 1942, Burns and Roe, Inc., rendered the city of Jacksonville an engineering report, the scope of which covered the steam and electric generation, electric transmission, and distribution facilities of the City of Jacksonville. A new plant was recommended that will burn either coal or oil, and it was suggested that this plant be located near deep-water harbor facilities.

The 1942 peak load at the present Talleyrand Avenue station went occasionally as high as 52,000 kw. This station can be depended on to deliver peaks up to 60,000 kw, says Mr. Pierce.

Requirements of a Sound Urban Redevelopment Statute

A Type of Legislation Urgently Needed for Effective Post-War City Planning

By Alfred Bettman
Chairman, Committee Legislation,
American Institute of Planners

In terms of priority of need, the most urgent type of legislation in relation to redevelopment of blighted and other areas of cities and their regional or metropolitan areas is planning legislation; that is, legislation which provides for planning agencies fit to handle the tremendous task of basic planning for the rebuilding of our cities for their place in the local governmental structure; their powers and procedures and the other items related to the process of the planning from the general master or framework plan to the precised redevelopment area site and bulk plan.

With these considerations in mind, it may be said that the prominence of and emphasis upon redevelopment corporation legislation has been somewhat unfortunate. In this remark we are referring to the elaborate redevelopment corporation statute of the New York type. The elaborateness of the provisions of that type of statute concerning the powers of and the controls over redevelopment corporations is the resultant of two features, namely tax exemption, and the grant of power of eminent domain. No discussion of the policy of tax exemption will be indulged in; but in many states such tax exemption would be unconstitutional except for those properties which are to be devoted to public uses, including public housing. As for the power of eminent domain, the cities can be granted that power and can acquire the properties, and there is no need for granting that power to redevelopment corporations.

As for the planning and the administrative or financial controls, the municipality can, without any elaborate redevelopment corporation legislation, obtain those controls as terms and conditions of the sale or lease of the land in the redevelopment areas. Probably a redevelopment corporation could be organized under the general corporation law of any state. At any rate, a section about redevelopment corporations, included in the general urban redevelopment bill which will be outlined below, might be all that would be needed.

Municipal Land Corporations—A Dubious Device

Another subject, the emphasis upon which has unfortunately diverted us from the more urgent type of legislation, is the land corporation; that is, the creation of corporations with the power to plan the use of the land of the city and to buy, condemn, sell, lease, etc., the land in the city. We dare say that if one would examine the calendar of the City Council of any large city, one would find that a considerable percentage of the calendar dealt with the very subjects which it is proposed to place within the control of these land corporations. What can there be which is more vital to the people of a city than what is built upon the land and what uses are made of the land and structures thereon?

To take from the elective legislative body the decisions of these questions would be an abandonment of the principles of democracy. Furthermore, the combination in the same agency of the guiding stage of planning (by which is meant the master planning and stages of the precising thereof antecedent to the stage of construction planning) and the actual handling of the acquisition and disposition of the land is not a wise combination—first, because it is likely to impair the quality of the planning, and second, because it is likely to accelerate anti-democratic trends.

So, any land corporation statute which proposes to give all the planning and administration of land uses to a corporation other than the municipal corporation itself is undesirable. The municipality should of course have a land administrative department; but the chances are that under existing statutes or charters, a municipal corporation has the power to establish such a department and, at any rate, a short section in a general urban redevelopment statute would take care of this subject.

The Planning Agency's Place in Municipal Government

The vexing question of the composition of the planning agency and its place in the governmental structure and its relationships with the legislative and administrative organs is, despite the great amount of discussion in which we have indulged, far from clarified. What some have done is to observe the disappointing results of the work of the present customary form of planning board and to jump therefrom to the conclusion that the planning organ should be a subordinate official of the chief administrator.

This is wretched logic. It is at least equally true that the municipalities without the present type of planning agencies have done less or poorer city planning, and it would be equally sound logic to jump to the conclusion that the present customary type of planning agency is the best. The components of the problem have been so frequently discussed that space will not be used on them here. The planning agency must be in a position which gives it freedom in the scope and method of the planning, with close relationships with the administrator and with direct access to the legislative organ; all of which would seem to be indisputable.

As a text from which to discuss this question, the recent Cleveland charter amendment, which was printed in the *ASPO News Letter* of December 1942, can serve.

This charter amendment provides for a Planning Commission of seven, one of whom is a representative of the City Council, and the other six uncompensated members appointed by the chief executive. Except for the absence of any administrative ex-officio members, this is the conventional planning commission. There is a coordinating board of administrative officials with cooperative relationships with the Planning Commission. It is the Planning Commission with which the function of making the master plan rests, and there is compulsory referral to the Commission of all ordinances regarding public uses and improvements and zoning amendments, with report thereon by the Commission to the Council, with the requirement of two-thirds of the latter's members for the overruling of the former's opin-

ion. As is obvious, there are the provisions of the traditional type of planning statute.

In the Cleveland Charter Amendment, the Mayor selects the chairman of the Commission. Whether or not it would be better to let the Commission select its own chairman is a debatable question, and not exceedingly important. There is provision for a planning director. He is appointed by the Mayor upon nomination by the Commission, thus practically a joint appointment by the chief executive and of the planning agency. He is ex-officio secretary of the Commission. He nominates the staff. It will thus be seen that cooperative relationships between the chief executive, Council, and Planning Commission are promised, and that there is no substantial departure from the customary form of organization other than the appointment by the chief executive of the head of the planning staff, the chief executive being limited, however, in this respect by the power of the Commission to nominate.

Outline for an "Urban Development and Redevelopment Statute"

There will now be presented a brief and hurried outline of the content of the most important and urgent piece of state legislation, which we can call the "urban development and redevelopment statute":

1. In so far as existing statutes do not provide a satisfactory form of planning agency or ample planning powers, this should be covered, and provision be made either for a metropolitan or urban area planning agency or for the power in the planning agency of the central city to include the urban area in its master plan.

2. A declaration that the acquisition and assembly of land and the holding thereof and the leasing or selling thereof for the carrying out of master and area development and redevelopment plans is a public use.

3. The grant of power to the municipality to acquire, by purchase or condemnation, and to assemble land for said purposes.

4. The power to lease the development and redevelopment areas to redevelopment corporations or public housing agencies, and the power in such corporations and agencies to become lessees of such areas and to carry out the adopted development plans thereof.

5. The power in the municipality to sell land for such development or redevelopment. (The determination of the question of policy as to whether the municipal corporations shall bring about the development and redevelopment through sale or through lease could be left open by including both in the enabling provisions of the statute.)

6. The power in the municipality to create a land department, or the power in the municipalities of an urban area to create a common land department.

7. A section about the creation and powers of redevelopment corporations.

8. The power in the municipality or municipalities to accept federal advances and to issue therefor income debentures or other types of securities which commit the net revenues or receipts of the municipality from the areas in which the land was acquired through the federal advances to the payment of such advances. Whether the bill should go beyond this and permit general credit bonds to be issued within the statutory bond limitations is a question for consideration.

9. The requirement that the uses to which the land is put, whether by conditions of lease or conditions of sale and whether administered by the municipal or metropolitan land department, must conform to the master and development plans; which means, of course, that local legislative approval would become necessary for any detailed plan which is to be the basis of a lease or sale of any land by the municipality or the incurring of indebtedness by the municipality. There should, of course, be provision for modification of the plans.

The above about covers the necessary ingredients of the first state statute. The subject matters of more expeditious eminent domain procedure and of tax forfeited and abandoned land could be left for later statutes or could be incorporated in this aforesaid first state statute.

Local Planning in Six North Alabama Towns

THE Alabama State Planning Commission expresses the belief, in its pamphlet called "Alabama Planning and Local Planning in Six North Alabama Towns," that planning on a local level is basic to effective planning on higher levels of government, and that community planning on a county-wide basis will be most effective in providing within that area an over-all favorable correlation of the elements of the economic and social life within the county.

Efforts of former years to encourage recognition of planning as an essential function of local government is said to be more than justified by the fact that local planning groups are able to serve their communities effectively under the stress of the war program. In addition, there has been increased interest in planning in North Alabama communities as evidenced by the greater number of regular planning commission meetings, higher attendance at these meetings, and increased participation in terms of funds and personnel which the local governments themselves provided.

Major emphasis in the work of the planning commissions has been toward the solution of problems created by the expansion of war activities in the area, and there has been much cooperation with the State Planning Commission and with federal agencies such as TVA and the Federal Housing Agency.

Progress Reported

In *Tuscumbia*, a school report, a zoning ordinance, and a 100-house project have been approved by the planning commission and a survey of the sewerage system has been made.

In *Florence*, a school report, a Major Street Plan, and an addition to the War Housing Project were all approved, and a zoning ordinance was prepared and is under consideration.

The *Sheffield* Planning Commission has approved a school report although no problems exist at the present time. It has also reviewed the sewerage system, recommended a zoning ordinance, which was adopted by the City Commission, and has approved two segments of a Major Street Plan which is being given careful study.

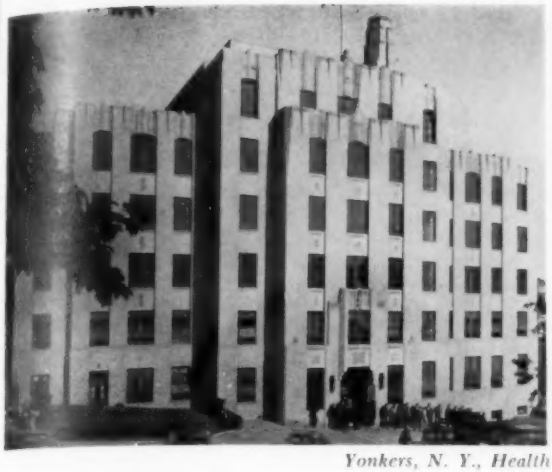
The planning commission for the whole *Muscle Shoals Region* (including Tuscumbia, Florence, Sheffield, and Muscle Shoals City) undertook and recently completed a survey of all existing recreation facilities in the area.

In *Decatur*, land-use, recreation, and water-system surveys have been completed, a zoning ordinance and a Major Street Plan are under review by the TVA Department of Regional Studies, and a water-front study is being made.

In *Madison*, the Town Council has approved the Planning Commission's zoning ordinance and ordinances regulating trailer camps, tourist camps, and bunk houses.

In *Guntersville*, a survey was made of the effects on the community of a zoning ordinance which is already in operation, and recommendations were made for the revision of certain sections. A recreation and water-front development survey were approved by the City Council, and a topographic map is now in preparation.

Establishment of planning as an essential function of local government in Alabama communities requires a continuing program of demonstration and accomplishment; evidence that planning commission action is of practical value to the community. Under the program, the Alabama State Planning Commission has emphasized the need for the local commissions to understand thoroughly the place and function of planning in the local community and has recognized that the making of effective plans depends not upon the passage of ordinances but upon the degree to which local citizens understand and support the plans that have been advanced.



Yonkers, N. Y., Health Center and Public Library

Yonkers Fire Insurance Cost Down 66 Per Cent in 14 Years

FOURTEEN years ago the city of Yonkers, N. Y., was paying more than $14,000 a year in fire insurance premiums; premiums for 1942 amounted to $4,759, a drop of 66 per cent since 1929. This reduction may be attributed about fifty-fifty to initiative on the part of the city government and the general lowering of fire insurance rates during the period. Accompanying this decrease is a rise of $400,000 in the amount of insurance carried on 81 city-owned buildings and the contents of 40 of them.

Prior to 1929 each department carried insurance on its buildings. The system was necessarily haphazard, the matter being left to the discretion of some 30 individual insurance agents who decided how much insurance should be carried by each property. Then the city's fire insurance job was placed in the City Architect's Office and all insurance charges eliminated from department budgets. The Architectural Engineer who heads this office studied and appraised every building and its contents. Examination of the insurance carried showed many discrepancies. In the case of two similar bath-houses, for instance, the contents of one were insured for $10,000, the other for $200.

All the necessary rating schedules were obtained, showing how the rates are figured. With this information it was possible to make improvements which would decrease the rate. Electrical defects were corrected. Buying a $5 fire screen to put in front of a fireplace reduced the premium on one building by $40 per year. All insurance policies are written for 80 per cent of the insurable value, which is replacement cost minus depreciation. No fire-houses are insured.

Annual Reappraisal

Each year all the 81 buildings are inspected and reappraised and an inventory is taken of the contents of 40 of the buildings. The buildings and contents are then reappraised in accordance with current values. A complete schedule is made by the city, the premium is figured for each building, a weighted average rate is established, and approval of it is obtained from the Suburban Division, New York Fire Insurance Rating Organization.

Five-Year Plan Saves 14 Per Cent

In 1940 a study of a five-year insurance plan resulted in its adoption. An insurance-finance company pays five years' premiums to the underwriting company, and the city reimburses the finance company in five annual installments with 4 per cent interest on the unpaid balance. This reduces the cost of the insurance by 14 per cent. There are taxpayer objections to the city's paying five years' premiums in one year, though doing so would save 20 per cent instead of 14 per cent.

An additional 12 per cent decrease was effected from reduced insurance rates applied to all public buildings throughout the state in 1941. Other general rate decreases during 1929-1940 brought the average rate down about 22 per cent. Thus, 48 per cent savings were received from class rate reductions and the adoption of the five-year-term plan of paying premiums. As the total saving amounts to 66 per cent, *there is an 18 per cent saving attributable to careful checking of insurance and rates,* eliminating hazards where possible and complying with various recommendations of the National Board of Fire Underwriters. An example of this careful work is indicated by the following paragraph from the 1940-1941 report of the Architectural Engineer's Office:

> Data were furnished and other assistance was rendered to an engineer of The Home Insurance Company in connection with appraisals and recommendations made by him for insurance on the various buildings; his appraisals and recommendations were checked; a chart was prepared to show the difference between our appraisals and those of the said engineer and between the insurance carried by us in each case and that recommended by him; and we then determined the proper amounts of insurance for the 1942 schedule.

Voting Machines Insured

During 1940 the voting machines were removed from the general fire insurance policy, and a separate five-year Inland Marine policy was financed through the Bancredit Corporation. Formerly these machines were covered for fire only at 80 per cent of their

value while in storage and were not covered at all during transportation or use. The present policy covers them at all times for 100 per cent of their value and includes coverage against any damage—at $318 less per year than under the old policy, the rate being 26.7 cents instead of 58 cents per $100.

Motor Vehicles Insured

The insurance on all automotive equipment is also handled by the City Architect's office. About 160 pieces are covered by fire insurance. A complete inventory is kept and all these vehicles are now revalued every year according to the current "Official Automobile Guide." Rates decreased 41 per cent during the last two years.

About 200 pieces of motor equipment in eight classifications are covered for public liability and property damage, with limits of $25,000 to $70,000 for public liability and $5,000 property damage. This policy requires continual checking of the equipment on hand and in use. Snow-removal and other equipment is removed from the policy during certain months and the premiums are adjusted accordingly. Rates have been reduced 34½ per cent since 1939. A drivers' safety plan helps to keep rates at minimum.

Some 40 automobiles are covered for non-ownership liability and property damage. Premiums have been reduced from $600 in 1939 to $450 now. None of the city's automotive equipment is insured against theft and no fire-fighting equipment is insured against fire.

Other Insurance

Other forms of insurance cover elevators, high pressure boilers, safe-and-burglary, messenger-and-office robbery, registered mail, bookmobile, plate-glass, and public liability on rented property. The city does not carry any public liability insurance on its streets, parks, playgrounds, or buildings, any compensation insurance on its employees, or any War Risk Insurance.

Below are a few of the Yonkers properties and their current fire insurance.

	Buildings	Contents	Total
City Hall	$633,400.00	$78,500.00	$711,900.00
Public Library	120,800.00	69,800.00	190,600.00
Health Center	391,100.00	22,200.00	413,300.00
Public Bath No. 3	133,800.00	1,600.00	135,400.00
Public Bath No. 4	183,000.00	2,500.00	185,500.00
Police Headquarters	127,900.00	11,200.00	139,100.00
City Jail	103,000.00	1,000.00	104,000.00
Grey Oaks Hospital	93,600.00	15,000.00	108,600.00
Contagious Disease Hospital	174,500.00	19,400.00	193,900.00
Garage, Repair Shops	90,700.00	37,500.00	128,200.00
Garage, Storage, Sign Painting	158,700.00	5,900.00	164,600.00
Incinerator	129,200.00	1,200.00	130,400.00
Museum Building	120,400.00	4,800.00	125,200.00
Water Tank	68,100.00	.....	68,100.00
Water Tower and Storage Tank	17,700.00	100.00	17,800.00
Low Service Pumping Station	82,100.00	1,000.00	83,100.00
Tube Well Pumping Station and Coal Bin	144,500.00	3,400.00	147,900.00

Wartime Service of the Honolulu Chamber of Commerce

IN the January 15 *Nacos News*, the official publication of the National Association of Commercial Organization Secretaries, John Hamilton, Secretary of the Honolulu Chamber of Commerce, tells what an important part a chamber of commerce is called upon to play in time of actual combat in a war area. A summary of Mr. Hamilton's account follows:

The Islands of Hawaii, and especially the city of Honolu, form what is perhaps the most war-conscious community under the American flag. This very naturally would be true because of the attack on Pearl Harbor when Hawaii became a theatre of war, but it was also true two years before the war when many preparations of an emergency nature were made.

For example, late in 1939 the Honolulu Chamber of Commerce prepared a disaster plan which is now the plan of the OCD. In 1940 the Chamber proposed to the Mayor that an entertainment committee be appointed by him to care for the enlisted personnel, of which many thousands even at that time were in our midst. This committee functioned effectively until the USO came into being and took over.

No private organization in this Territory has done as much as has the retail group of the Chamber in the sale of war stamps and bonds. It has been gratifying to note the reports from the Treasurer of the United States, putting Hawaii in first place on the quota basis for the entire nation.

Early preparations and an alert community consciousness had put our people well up in front so that on December 7, 1941, there was a most remarkable reaction when the final truth was thrust upon us that we were at war.

The Chamber, through its Public Health Committee, had organized the largest blood bank in the Territory one month before the attack on Pearl Harbor. When the call came, the plasma was put into use immediately. However, there was need for more and more blood, and the Chamber staff called by telephone hundreds of previous donors asking for a second donation. It will forever be an outstanding example of community cooperation that the only person who failed to respond to this second call was one too ill to be moved. In addition to the hundreds called by the Chamber, many hundreds responded to the appeal, and now a huge reserve of plasma is available for use as needed.

Dimouts, Gas Masks, and Bomb Shelters

Since that terrible day the people of this Territory have faced conditions, in business and in private life, more difficult and more restricted than in any civilian locality under the American flag. Not a light from a home or other building, not a street lamp in the entire Territory has been permitted to show after blackout hours—6:45 P.M. during the winter, and 8 P.M. in the summer. Automobiles are off the streets by 8 P.M. throughout the year and pedestrians at 10 P.M., except by special permit. Gas masks have been issued to all of the 500,000 population, and bomb shelters have been constructed at practically every home at the expense of the home owner.

During the last twelve months some 6,000 businesses have closed their doors—one-fifth of the total number of businesses in operation before the war. The Chamber has had an important part in assisting business during these trying times. Interpretation of military orders, federal regulations, and laws, with the assistance of our legal advisers, have been among our most helpful contributions since Pearl Harbor.

Interestingly enough, all these hardships have been accepted because they are recognized as being in our own best interest; compliance, therefore, is a normal procedure. Leadership is essential, and we cannot be sure that another enemy attack may not occur at any time. It is good business and good judgment to accept graciously the situation in which we find ourselves and to comply with military restrictions. We in Hawaii have made more sacrifices than have the people of the mainland states, much more, and we must be ready for far greater sacrifices if the need arises.

To Make Victory Gardens Victorious

A Patriotic Task for Municipal Officials, Defense Councils, and Local Victory Garden Committees

THE AMERICAN CITY hopes that many of its readers have already acted on the appeal to municipal governments and local organizations voiced by M. L. Wilson of the U. S. Department of Agriculture in his article on "Victory Gardens in Cities and Suburban Areas," in the January issue of this magazine.

To make the victory garden movement victorious, a mere springtime spurt will not suffice. Local Victory Garden Committees, functioning through Defense Councils or otherwise, must do a lot of hard work throughout spring, summer, and autumn. For the guidance of such committees, an exceptionally well-thought-out analysis of responsibilities and functions has been prepared by the Chairman of the State Victory Garden Committee* of New Jersey, F. G. Helyar, of the College of Agriculture, New Brunswick. In submitting this memorandum to local organizations, Mr. Helyar points out that "It is recognized that there are differences between communities and that in any general scheme there should be a certain amount of flexibility, so that the program may be adapted to varying conditions."

The rest of the memorandum follows:

Local Victory Garden Committee

It shall be the responsibility of the local Victory Garden Committee to study the problems of Victory Gardening in the community so that it may:

1. Devise and promulgate a publicity or promotion campaign in the community that will not only advise citizens of the importance of Victory Gardening this year but also acquaint them with the possibilities of Victory Gardening in that community as a whole or in subdivisions thereof. It should also point out limitations such as poor soil and other factors that might make gardening inadvisable in certain areas or with certain individuals.

2. Correlate the local Victory Garden program, where necessary or advisable, with the work of other committees in the local Community War Service Committee, such as welfare, consumer interest, nutrition, etc., so that the Victory Garden program may serve the people of the community to the greatest possible advantage.

3. Inventory all available resources and facilities in the community that will aid in developing an efficient Victory Garden program and arrange for—

(a) Experienced personnel for supervision and guidance of the inexperienced

(b) Land for either allotment, community, or school gardens

(c) Machinery for plowing and fitting land

(d) Tools for cultivation and care of gardens

(e) Supplies of rotted manure or other suitable organic matter that can be secured for gardeners and delivered at a reasonable price to those who desire it

(f) Water supply, available in case of continued dry weather, for gardens not near residences of gardeners

(g) Locker or other facilities for storing tools at or nearby community or allotment gardens

(h) Transportation facilities for those who may live too far to walk to and from gardens and carry equipment or produce

(i) Means for protecting gardens of all kinds against vandalism or stealing

(j) An appropriate room for meetings of gardeners in the community for discussion of common problems or for purpose of instruction; with equipment such as blackboards, projection apparatus, and screens, demonstration apparatus and materials (School buildings should be considered)

(k) Office facilities in accessible centrally located quarters for garden supervisor. (It would be desirable if these were large enough for committee meetings.)

4. Provide for the registration of Victory Gardeners in the community on cards that should be filed for record and from which valuable data as to problems, progress, and final results may be attained.

To be eligible for help, particularly in the allotment of land on other than the home premises, registrants should be asked to pledge themselves definitely to give their gardens competent attention through the entire season, not to waste seed, fertilizer, or spray materials and to utilize garden products as wisely as possible through storage and canning for winter use of surpluses not usable by the family during the summer.

5. Provide an educational program that shall have as its objectives the following:

(a) To acquaint Victory Gardeners with the objectives of the New Jersey Victory Garden program of food production and conservation

(b) To inform them of the recommendations of the State Victory Garden Committee as to those vegetables which should be grown to supply them with the most essential healthful foods

(c) To teach them to garden as effectively as possible

Suggestions for Local Educational Program

The following means are suggested for carrying out the local educational program, first for leaders and then for Victory gardeners:

A. For Local Leaders

Short intensive courses to acquaint them with the 1943 Victory Garden program and to inform them of the recommendations made by the College of Agriculture as to the details of good garden practices under war conditions. Circulars on vegetable and fruit production for Victory Gardeners are being prepared for early distribution and could be used as a basis for the instruction.

These courses should be arranged for through the county agricultural agent.

B. For Victory Gardeners

Neighborhood or garden district meetings for discussion of details of good garden practice.

One or more demonstration gardens in each garden district using gardens of experienced gardeners that are as centrally located as possible in the district. Definite times during the week should be arranged for and announced in the local press or by other definite means so that the owner will be on hand.

Garden clinics in connection with the meetings at demonstration gardens are most valuable means of training.

Short, timely articles appearing regularly in the local press are valuable and should be considered. The county agri-

* This Committee is functioning under the State Office of Civilian Defense Director (Trenton, N. J.) in its Division of Community War Services.

cultural agent may help here with advice.

Displays in well-located local store windows can be made very educational.

Competitive effort among the gardeners during the season will give stimulus particularly if some recognition, which need not be expensive, is worked out.

Victory Garden harvest shows definitely are valuable educationally and should be given careful consideration.

In this educational program there are many local sources that may be drawn on for help, such as members of garden clubs, professional gardeners, florists, nurserymen, experienced home gardeners, teachers of agriculture in high schools, and others. The county agricultural agent will be able to make suggestions for speakers from the files in his office.

The county agricultural agent will be glad to give all the help he can in those phases of the educational program that cannot be met locally.

If there are matters that should have the attention of the College of Agriculture or the Agricultural Experiment Station, requests for this aid should be made through the county agricultural agent.

It is requested that the outline of the local educational program with the names and addresses of those participating be sent to the county agricultural agent.

6. Coordinate in every way possible the garden efforts with the home canning program so that food will not be wasted. The canning program will be under the direction of other agencies.

Functions of Leaders

The Victory Garden Committee Chairman

Besides presiding at the meetings of the committee, the chairman should be the executive officer of the committee. In smaller communities or in those where the load will not be too great he could also serve as garden supervisor. Where the load is heavy, however, the chairman should leave the details of actual supervision to others and concern himself with the over-all phases of the work.

He should acquaint himself thoroughly with the progress of the campaign through reports from and frequent contacts with the garden supervisor and thus be able to bring to the committee quickly problems that merit its consideration and decision.

He should keep a file of the reports so that he may make a report at the end of the season.

The Victory Garden Supervisor

The Victory Garden supervisor shall be appointed on the nomination of the Victory Garden committee.

It shall be his responsibility to supervise the work of the district garden leaders and to report to the chairman of the Victory Garden Committee at stated intervals and to bring at once to the latter's attention any problems he cannot meet or which are outside his authority.

District Victory Garden Leaders

The Victory Garden leaders shall be appointed on the nomination of the local Victory Garden Committee.

They shall be directly responsible to the Victory Garden supervisor.

Each of them shall in his own district become acquainted with the needs of that district and report them to the supervisor; shall put into effect in his district the program of the Victory Garden Committee as given to him by the supervisor; shall act as guide and counsellor on garden practice to the Victory Gardeners in his district; and shall make such reports as may be necessary to acquaint the Victory Garden Committee with what has been done.

Memoranda on important topics concerning the work of local committees and on important phases of the program will be issued and released from time to time. Requests for this material should be addressed to F. G. Helyar, Chairman, State Victory Garden Committee, New Brunswick, N. J.

America Is Singing

By Captain Glenn Ward Dresbach

America *is* singing—
Not the catch-tunes of less fierce times,
Not sentimental ballads of other wars the young
hear with suspicion—
But vast sky-reaching and world-circling paeans
of steel!
All of America is singing . . .
Far out across the oceans ring the measures;
Across the widest meadows of stars the motors
carry this song;
Bright wheels sing it all day and night;
In mines the hammers beat it against the walls
of darkness;
Under waters the submarines send it vibrating
down the backbones of hidden continents.
Machines hum it in little factories whose windows
are bright again,
And plants by the acre thunder their harvest song
to far-off starving people
With haggard faces turned to the stir of light.
The tractors roar it in the field we cherish;
The great tanks grind the notes out as they surge
into formation . . .

Fewer parades, less singing in this War?
This is an urgent, desperate business that wears
no false coat.
We are stripping down to this clean steel of our
determination.
Enough light flashes from it to light the world!
We join in one song that will thunder on to free
men through the ages—one song only—
In it all hope and beauty of the world; in it all
dreams—
And some day hearts of nations will have the quiet
old songs back again!
In it all faith—brute forces could not trample;
In it our praise to God and God-in-man!
In it our final answer to the foes of all we cherish.
Lift your heart to the sky—the song is there!
Press your ears to the ground—your heart will
quicken!
And are we great enough for the song? is the
question—
Not where are the old catch-tunes;
This song is enough to save the world . . .
America *is* singing.

Local Government Is News — 27

*Block Service, City Hall, and the Citizen: Civilian Defense—5**

By PHILLIPS BRADLEY

NOW that thousands of Civilian Defense Volunteer Offices throughout the country are developing a new phase of their organization and activities, City Hall has a fresh and significant concern with CDVO. The new Block Service Organization, which includes most of the non-technical Civilian Defense activities, is of great potential value to many municipal departments.

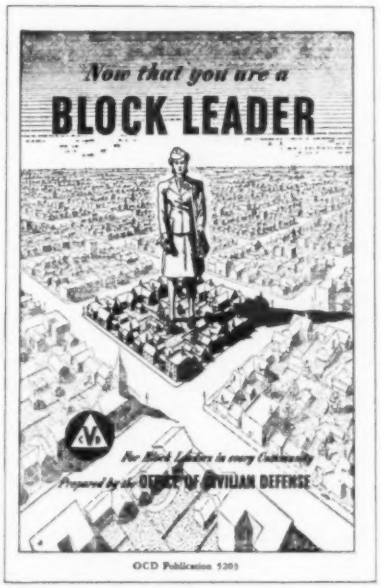
Although the Block Service Organization has been "in being" some months, it has only recently begun to function actively and is still in the process of organization in many cities and towns. What are some of the factors which will determine the utility and effectiveness of CDVO's new Block Service Organization as a community agency to implement the wartime responsibilities of City Hall?

Why a Block Service Organization?

As the likelihood of air raid emergencies has declined, the necessity for intensified activity on the home war front has increased. The entry of thousands of mothers into war industries has placed new burdens on City Hall. Day nurseries for younger children and more adequate recreational facilities for potential juvenile delinquents are primarily the responsibility of local governments. Scores of communities have already been faced with new and very real problems in child care; others are looking toward tomorrow's horizon to meet these problems before they become critical.

Rationing programs are also fertile sources of difficulty for City Hall. Black markets and chiselers must be policed—if for no other reason than to maintain civilian morale. The application of these programs often involves complexities beyond the average citizen's knowledge. The interpretation of detailed and intricate regulations must be universal if they are to be effectively enforced through voluntary citizen action.

These and many other problems of the home war front are primarily local in character—and in solution. The neighborhood is the most effective unit of organization to meet the citizen's individual problems and needs. It is in the neighborhood that community of feeling is most viable in an American way of life. Although we may not know our next-door neighbors as well as someone blocks away, the block, the street, the precinct is, after all, the place where we live, the locale of our home and its myriad activities. The neighborhood is, therefore, the most


Now that you are a
BLOCK LEADER
For Block Leaders in every Community
Prepared by the OFFICE OF CIVILIAN DEFENSE
OCD Publication 5203

effective nexus around which to organize a service agency to meet the common problems all of us face in wartime. Thus, CDVO's Block Service Organization came into being with the smallest neighborhood unit as the nucleus of its activity.

What Block Service Organization Is

The essence of the Organization is neighborhood self-government in home-front war service. It is based on volunteer enrollment in CDVO and operates without paid executives—from bottom to top. It is democratically organized, or can and should be. In some communities, it has been charged that such organization is a potential fascist threat; the influence of Block Leaders on their neighbors can, it is said, become coercive.

This threat lies, of course, just under the surface of every neighborhood-based organization, from the political party to the woman's club. Is there, however, any reason to believe that many Americans are going to let their neighbors wield autocratic power over them? Block Leaders are armed with no authority beyond their own volunteer status and their interest in helping their neighbors.

Their only influence will come from their capacity to be of service; if they do not perform, they are unlikely to carry much weight with the people on their street. The answer to such a charge lies in the purposes of the Block Service Organization and the character of the individual Block Leader.

Block Service Organization structure will vary with every community. In smaller communities, little or no overhead organization will be necessary. The whole volunteer force will be integrated through either a local CDVO officer or one or more department heads at City Hall. In any case, the entire personnel will necessarily work in close cooperation with, if not directly under, these department heads, the wartime functions of whom the Block Service Organization is intended to supplement.

In larger cities, a more elaborate administrative organization is inevitable. It may well be organized along the lines of the air raid wardens' organization, with Sector and Zone Leaders to integrate the work of the individual Block Leaders. The overhead organization may, in turn, be built around police, fire, or health districts. Whatever geographical pattern is used, it is indispensable that the entire organization should center in the city-wide CDVO. Only thus can effective relations be established with the various city departments—Health, Welfare, Recreation, Education, and the like—which must direct and utilize the Block Service Organization's day-to-day activities. The larger the city, the more carefully must administrative supervision be organized and integrated. The ultimate success of the entire program envisaged by the Block Service Organization plan depends primarily on this factor.

Its dual character must similarly be recognized. On the one hand, effective internal administrative control must be established within the Block Service

* For earlier discussions of Civilian Defense activities of interest to local officials see THE AMERICAN CITY, January 1942, p. 50; February 1942, p. 37; March 1942, p. 62; October 1942, p. 77.

Organization and between it and other CDVO divisions (for instance, training). On the other hand, no less close and intimate relations with the relevant City Hall departments must be charted, and continued. If the services the Organization is intended to render are to be of value to the community, they must be based on and implement the existing services of City Hall. Only through this two-way relationship can the potentialities of volunteer wartime service be realized to the full within the ambit of City Hall's responsibility for community safety and welfare.

Building an Effective Block Service Organization

The key to an efficient volunteer organization of this type is adequate recruitment and training. Considerable care must be exercised in selecting enrollees for duty at each level. The Block Leader must be a person at once unselfishly and unreservedly interested in the program and capable of direct, informal, and intelligent—in short, human—contacts with his neighbors. Here the CDVO interviewer has an indispensable part in making discriminating selection among volunteer enrollees. Attention should be given to the racial and religious complexion of the community's neighborhoods. Block Leaders should be selected in such a way as to be truly representative of the entire community, not of just one or two economic or social groups. In a foreign-language neighborhood, for instance, care should be taken to recruit community leaders who are themselves residents of the neighborhood or who are intimately acquainted with it and able to talk the language of the people living there.

For the administrative posts, Zone, Sector, and central-office Leaders, there must be a similar careful choice of those volunteers most likely to carry out their supervisory functions effectively. Here, previous administrative experience and sufficient free time to devote to managing the whole program may be added to the criteria for selecting Block Leaders.

Adequate training is no less than effective recruitment. In smaller communities, the problem is not so difficult as in the larger cities. In the former, all members of the Block Service Organization can, no doubt, be provided with a common training program. In the latter, precinct, sector, and zone personnel may well be trained together—and the training of Block Leaders delegated to them.

An effective training program must almost inevitably be divided into two segments. The first should be devoted to orienting personnel, at whatever level, to the general purposes and procedures of the Block Service Organization. The second should be devoted to specific training in the specialized programs—child care, rationing, salvage, recreation, health, and the like—for which the organization will be responsible. This part of the training program may well be continuous for the duration; as new programs are developed to meet home-front war needs, they must be interpreted to Block Service personnel.

So far as possible, all personnel should receive the first type of training before entering on their immediate duties. A major element in a sound orientation training course should be devoted to the art and technique of personal relations — face-to-face contacts. The first impression which a Block Leader makes on his neighbors in making the rounds on, say, the food-rationing program, will to a very large degree determine citizen-response to future directives from Washington or City Hall.

"How to Win Friends and Influence People" is the essence of the Block Leader's approach to his neighbors. He or she should receive some hints on the most effective ways of doing so during his preliminary training. If Block Leaders have been carefully selected, they will be all the more eager for such training and initially proficient in putting it into practice.

Old Residence Becomes Community Center

"LONGWOOD," a 16-acre estate in Salem, Va., has been purchased by the city and converted into a park. On the estate, surrounded by beautiful grounds and fine large trees, is an 18-room mansion which has become a community center building. The purchase price of this property, $20,100, was paid out of the general fund of the city.

A caretaker, working under a contract with the town, has charge of the entire building and occupies a portion of the second floor. Other rooms on the second floor are used for small group meetings. The first floor has two large reception rooms, a completely equipped kitchen, and a dining room where one hundred persons can be served. In the basement four Boy Scout troops maintain permanent headquarters and occupy a large assembly room and four other rooms. A large brick building on the grounds has been turned over to the local Minute Men Committee for its headquarters.

The building is used by practically all civic organizations and luncheon clubs—Kiwanis Club, Lions Club, Chamber of Commerce, Senior Woman's Club, Junior Woman's Club, two music clubs, four garden clubs, and the American Legion.

Local groups arrange with the caretaker for dinners or luncheons and for use of the building. Most of these organizations have dinner meetings and pay the town a nominal cover or rental charge ranging from $100 a year for the clubs that meet weekly to $25 a year for those meeting monthly. Other citizens using the facilities pay a nominal charge for dinner parties, bridge parties, and meetings of various kinds.

CARLETON C. MASSEY,
City Manager.

The Saga of the Minneapolis Defense Council

DAILY from January 11 to February 8, the men and women of Minneapolis were able to read the chapters of a stirring saga to whose achievements 40,000 of them are contributing patriotic services. It was the comprehensive story of the development and functions of the Minneapolis Defense Council and its significance in the community, told in a series of articles by Jack Connor and prominently featured in the *Minneapolis Daily Times*.

The announcement of the series was accompanied by a letter from Mayor Marvin L. Kline, in which the Mayor expressed his opinion that:

"No single factor has done more to bring fundamental unity to this community or to give our citizens the opportunity to express their feelings concerning this war in concrete deeds than has Civilian Defense.

"The background of Civilian Defense, its accomplishments, the spirit of unselfishness and devotion to duty that has prompted the thousands of volunteers in the set-up—all this and more is covered in the articles to be published. I commend them to the attention of the people of the city."

The wide scope of this series of articles and the attention-compelling manner in which they were presented are indicated by the accompanying reproductions of typical headings—much reduced from the 2-column size of the originals.

A Readable News Letter

Another exceptionally effective form of Civilian Defense publicity in Minneapolis is the mimeographed *News Letter* of the Minneapolis Defense Council. The issue of February 17, as an example, contains 22 pages, almost every one of them illustrated with a clever sketch. Here are two typical items on the cooperation of labor in the Defense Council's activities:

Any Old Boilers?

Cold weather only warmed the LABOR DEMOLITION COMMITTEE to its task, and on the freezingest sub-zero Sundays, full crews turned out to cut up heavy scrap. To date over 200 tons of heavy metal has been demolished by the crews. Those sumptuous hot dinners served under the direction of Louise Hoffman, secretary of the Labor Coordinating Committee, may help in drawing the men out on cold Sundays, but they certainly earn their dinners before they get them.

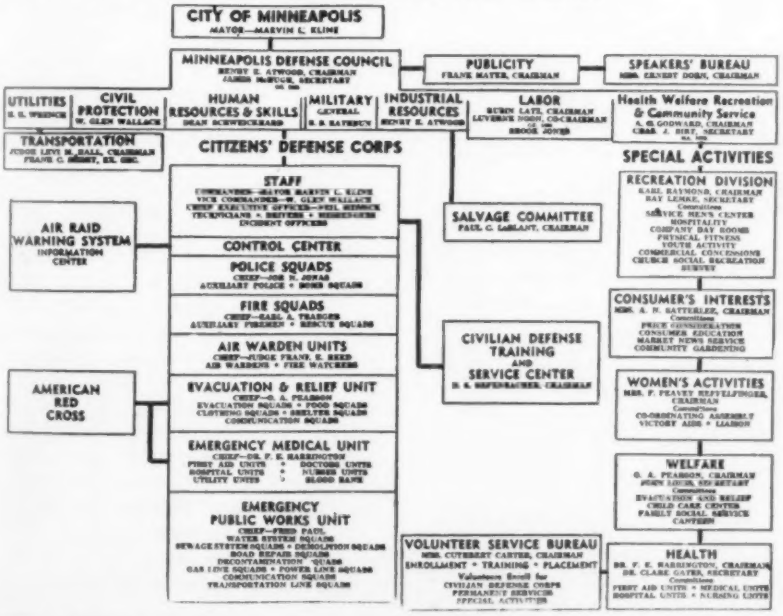
"Their chief problem now is MORE JOBS. They've sent an S.O.S. as they are sure there are still plenty of old boilers, tanks, etc., to be cut up around town.

Union Blood

Widespread enthusiastic response has come to the Labor Coordinating Committee's Red Cross blood bank project. A bloc of union men and women appear at the blood donor center every day to give their pint of blood for a man in the service. Labor's intensive campaign to line up donors has had much to do with the Red Cross reaching its quota here daily.

HAVE YOU GIVEN A PINT?

FAMILY TREE OF THE DEFENSE CLAN



Build or Repair Men..Red Cross Will Tackle It

•

Ever Dream of Being Fireman? Here's Chance

•

Ballroom Goes Grim to Train Auxiliary Cops

•

City Organized As Big Hospital For Emergency

•

City's Wartime Social Service Sets Pace in U.S.

•

Schools Run All Night to Fill Manpower Gap

•

Home Front Women Make It Their War, Too

•

Ingenuity in

Modern Water-Works Design

Overcomes Critical Materials Shortage at Portsmouth, Va.

By PAUL E. LANGDON
Greeley and Hansen, Engineers
Chicago, Ill.

THE modern, well-designed water-treatment plant has several distinguishing features that sets it apart from one built a few years back. Although styles may vary throughout the country, engineers and water-works men realize that the liberal use of steel, cast-iron, brass, bronze, and copper is now considered—let us say—in poor taste. And the use of mass concrete, manually operated valves, unreinforced concrete pipe, and other "non-critical" material is rated highly.

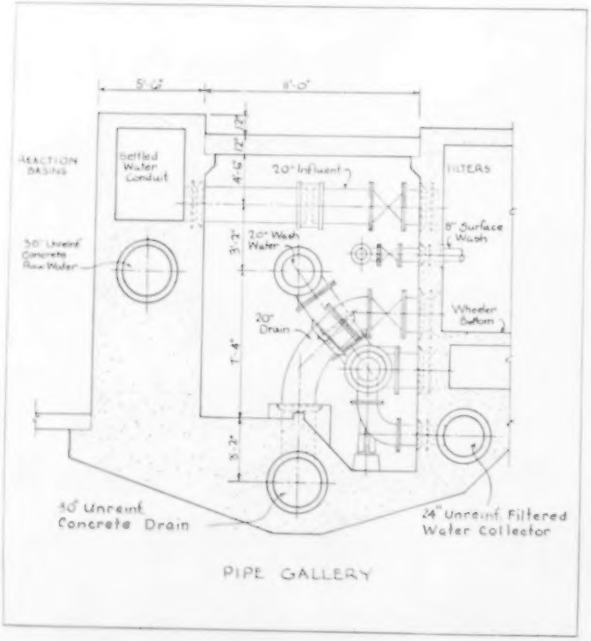
The new water-treatment plant of Portsmouth, Va., is a good example. When this job is completed, it will show a reduction of 85 per cent in the use of steel, 40 per cent in cast iron, and similar fat percentages in copper, bronze, brass, and related vitally needed material. Mass concrete will constitute a generous portion of the reservoirs and settling basins. And the reservoir itself will be built according to the unreinforced groined-arch design used late in the last century.

Portsmouth needed to improve its water-treatment plant. The specific "why" or "how much" need not be discussed for good and sufficient reasons. It is enough to say that the major use of water increased approximately 90 per cent, and studies definitely showed where this was being used and would be used in the future.

The city obtains its water from two impounding reservoirs on the Nansemond River. These, with a new emergency supply from the Nottoway River, furnish an ample supply. An old filtration plant located near the reservoirs treats the water, and a high-lift pumping station delivers the water to Portsmouth and nearby communities.

To meet the demand for water, the following additions to this plant were essential:

1. An aerator of the cascade type.
2. A chemical building for storage space and feed equipment to treat water for both existing and new structures.
3. Two reaction basins with mechanical mixing equipment to provide a displacement period of 45 minutes for the nominal flow of 6 mgd to the new units.
4. Two sedimentation basins providing a displacement period of 6 hours for 6 mgd.
5. Four rapid sand filter units, each with a nominal capacity of 1.5 mgd at a rating of 125 million gallons per acre per day.
6. Reservoir at the filter plant site, with a capacity of 2 million gallons.
7. Reservoir at Portsmouth, adjacent to the re-pumping station, with a capacity of 4 million gallons.
8. Reinforcement of supply force mains between the filter plant at Suffolk and the re-pumping station at Portsmouth.



A sketch of the pipe gallery. Notice the free use of mass concrete and unreinforced concrete pipe.

Designing Without Steel

The design of the rehabilitated plant made metal a scarce quantity. The entire project required less than 40 tons of reinforcing steel, or approximately 14,000 pounds per mgd of filter capacity. This is equivalent to the elimination of 85 per cent of the steel used in other plants of conventional reinforced concrete design. Similarly, the cast-iron piping for the filter plant represents about 9 per cent of the total cost, which compares with a figure often as high as 15 per cent in peacetime plants. No structural steel was used as such. The use of shapes, rods, and similar steel work was limited to pipe supports, clip angles, and other small items.

The reaction and sedimentation basins are designed entirely without reinforcing steel. The outside walls and the division walls between basins, subject to unbalanced pressures when a section is dewatered for cleaning, are of mass concrete. The floors are also of unreinforced concrete, sloped to a central gutter draining toward the main drain in the pipe gallery. (Fig. 1) All control of the distribution of raw water to the reaction and sedimentation basins and of settled water is by means of stop logs in grooves formed in the concrete. The openings are of liberal size to allow the installation of sluice gates at a later date. The draining of the basins is through unreinforced concrete pipe, encased in concrete. Hand-operated sluice gates are provided on each basin drain. The reaction basins are equipped with mixing devices designed for minimum use of critical materials.

The use of unreinforced concrete pipe in the operating gallery contributes to the reduction in the amount of

cast-iron pipe. (Fig. 2) The raw water conduit, filtered water collector, and the drain are under light pressure and are of concrete pipe encased in the mass concrete of the structures. The settled water conduit is formed in the top of the gravity wall section between the reaction basins and the operating gallery and extends the entire length of the filters, providing low velocities and short connections to the several filter units.

Operating Procedure

All the filter control valves, including the influent, effluent, back-wash, surface wash, and drain, are operated through an opening and closing cycle every time the unit is washed, usually once a day. In general practice, mechanical means are provided for operating the valves, ordinarily by water pressure at about 50 pounds per square inch. This method of operation requires bronze-lined hydraulic cylinders, which are of some size, on the larger valves. To eliminate the use of copper, the operating system for the valves was designed to use oil under pressure of 135 to 150 pounds per square inch, thereby reducing the sizes of all cylinders and eliminating the necessity for the bronze linings.

The four filters, located directly adjacent to the operating gallery, are of reinforced concrete. The filters are designed with the Wheeler type of false filter floor, which requires no metal, with the exception of reinforcement of the false floor supporting the gravel and sand. The filters are rectangular in shape, separated by common walls, and with backfill carried up around the outside nearly to the top of the walls. It was considered necessary to reinforce these units in order to reduce the possibilities of cracks and contamination of the filtered water in the lower portions, particularly below the false floor.

Uses 19th Century Design

In order to reduce the amount of critical material in the 2.0-million-gallon reservoir at Suffolk and the 4.0-million-gallon reservoir at Portsmouth, designs used late in the nineteenth century were adopted. These include gravity wall sections with an unreinforced inverted groined-arch floor, unreinforced columns, and an unreinforced groined-arch roof. (Fig. 3) The total amount of reinforcement in the 4.0-million-gallon reservoir at Portsmouth is about 300 pounds, all of which is in the floor sumps and access openings in the roof.

The technical literature describes in detail experience with groined-arch structures built early in the twentieth century. Many attempts were made to analyze this type of design theoretically, and several experiments were carried out to check designs and determine safe loads. Test results indicate particularly the sturdiness of this type of structure and its ability to carry loads considerably in excess of the usual two feet of earth cover and anticipated live loads. Apparently the most critical period is during the construction and until the entire roof is in place. Under ordinary procedure perhaps a fourth of the roof would be formed and placed in one operation. The roof forms would then be struck and moved into place for the second section. Failures have occurred when this procedure has been followed without providing support at the crowns of the arches to remove the thrust at the end of the section. The unreinforced columns have no ability to take this thrust and in one or more cases where the support of the arches was not provided a complete failure of the roof occurred.

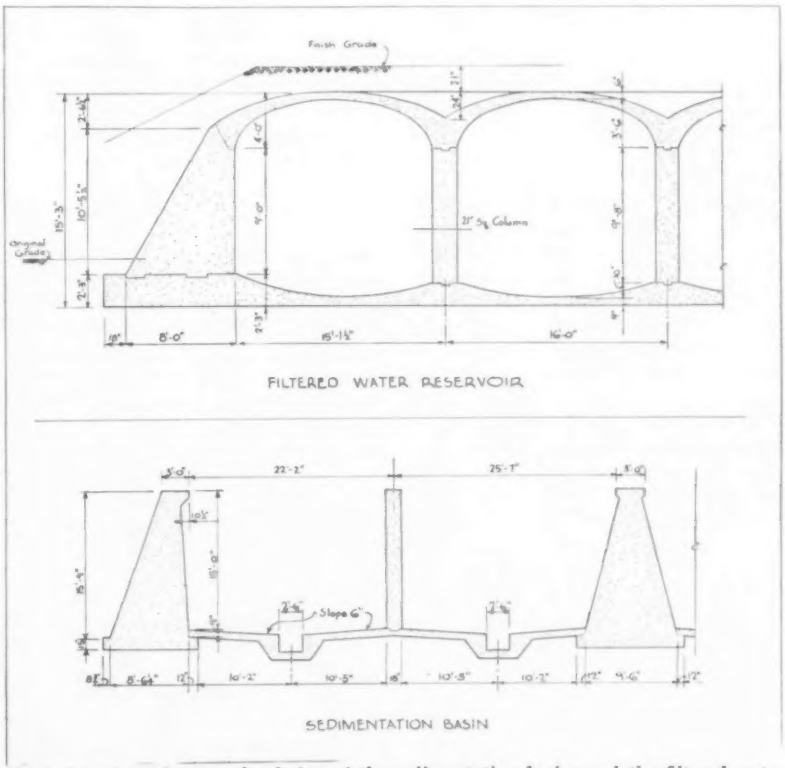
Similarly, the placing of concrete in the inverted groined-arch floor requires careful planning to provide proper access to the curved surfaces for finishing. In general, the procedure has been to place the concrete in alternate panels between outside forms that may be used as screeds.

The works were designed by Greeley and Hansen of Chicago, Ill., and are now under construction. Due to the urgency to provide additional capacity, preliminary plans and specifications in sufficient detail to allow contractors to prepare estimates were completed within ten days after authorization was given to proceed, and a contract was negotiated with the Ahlvin Construction Company, Chicago, Ill., four days later for the filter plant and reservoir at Suffolk. A contract has been negotiated with C. W. Lockwood, Hampton, Va., for the construction of the Portsmouth reservoir.

Design and Supervision

The construction of the work is under the supervision of Greeley and Hansen. Mr. Arthur S. Owens is City Manager; Mr. X. D. Murden is Superintendent of the Water Department; and Mr. F. J. Bergeron is City Engineer.

The project is being constructed as a non-federal project under the War Public Works Department of the Federal Works Agency. Mr. Blair Boyle and Mr. L. L. Pearsall are Federal Works Agency representatives in this area, operating under Mr. Kenneth Markwell of the district office, F.W.A. at Richmond, Va.



Typical sections showing the design of the sedimentation basins and the filtered water reservoir. Note the heavy unreinforced concrete sections that were used and the concrete channels in the sedimentation basin. The reservoir utilizes an old-time arch-design principle.

About ...

Sludge Gas Engines

In a Sewage-Treatment Plant

By Henry W. Taylor

THE sturdy growth of power generation in sewage-treatment plants by the utilization of sludge gas is one of the more significant features in the modern sewerage field. An estimated 25,000 hp are being developed by American treating plants in this manner. These have been in operation long enough to prove their practicability. The engines range in size from 15 to 1,200 hp, and installations of approximately 1,500 hp are already definitely planned. A review of the factors involved will serve as a guide in studying its applicability to various plant capacities and local conditions.

Gas Per kwhr

Considering average load factors, approximately 25 cubic feet of sludge gas are required to produce one kwhr for engine sizes less than 100 kw. Larger units reduce this somewhat under usual operating conditions. Around one-third of the recoverable Btu value of the gas is devoted to power production, one-third is dissipated in the engine jacket, and the last third escapes with the exhaust gases. To intercept all recoverable value, utilization of the remaining two-thirds of heat must be provided for in a power production layout.

The power plant requires supervision and maintenance and these costs must be considered. However, supervision is only a part-time effort when automatic safeguards are included in the plant design, and in the case of the sewage-treatment plant, additional help generally is not required. Experience has dictated an average maintenance cost of $0.0006 per kwhr generated, and lubricating oil may be estimated at 2,000 kwhr per gallon.

Capital expenditures must be considered and for preliminary purposes may be taken at $200 per kwhr for heavy-duty units of 100 kw or less and $150 per kw for larger units of 500 to 600 hp. This includes foundations, generating unit, and all accessories with the exception of the housing of the apparatus and waste heat boilers.

The question of best use for the power produced must be answered in each case with special reference to the local conditions. This answer must also include a suitable use for the two-thirds of the gas heat value which is absorbed by jacket circulating water and is contained in the exhaust. The power may be used at the sewage works, while the remaining heat values are utilized to heat the sludge tanks, buildings, or anything else convenient. The power can perhaps be devoted to water pumping, street lighting, or various other municipal uses depending on the size of the plant and the character of the community. In some cases there may even be an industrial outlet for the power and occasionally for the other heat by-products.

When used for electric power development, approximately 25 cubic feet of gas are required for each kwhr produced. Costs vary from $150 to $200 per kwhr depending on the size of the units. Possibilities for added power can be realized by combining ground garbage with the sludge and thereby increasing the sludge gas production.

Power production presupposes collection and storage of sludge gas, and some cases may justify an auxiliary power. It is important to note that a sludge gas engine can be converted easily to the use of gasoline by operation of a two-way valve which cuts off the gas supply and opens the way for gasoline through a suitable carburetor. In any case, a certain minimum of sludge gas storage will be required for equalization of gas production and to permit less than 24-hour operation of the power plant. Storage to equalize seasonal changes in gas production would probably not be feasible.

For the smaller communities where sludge digestion takes place at the sewage works and where garbage collection is separated from refuse, there is the opportunity to grind and digest the garbage at the sewage works and thus increase the total gas production by 150 per cent. There are many cases where the sewage sludge gas alone would hardly warrant the installation of power equipment and where the addition of garbage digestion will so increase the available gas as to render power utilization worthy of consideration. A municipality of 10,000 people and an assumed sustained gas production of 9,000 cubic feet per day will develop 360 kwhr per day, representing numerically 4 per cent of the daily cubic footage of gas. By adding ground garbage to the sewage digestion tanks, this gas production can be increased to produce 900 kwhr per day, or 112 kw for eight hours.

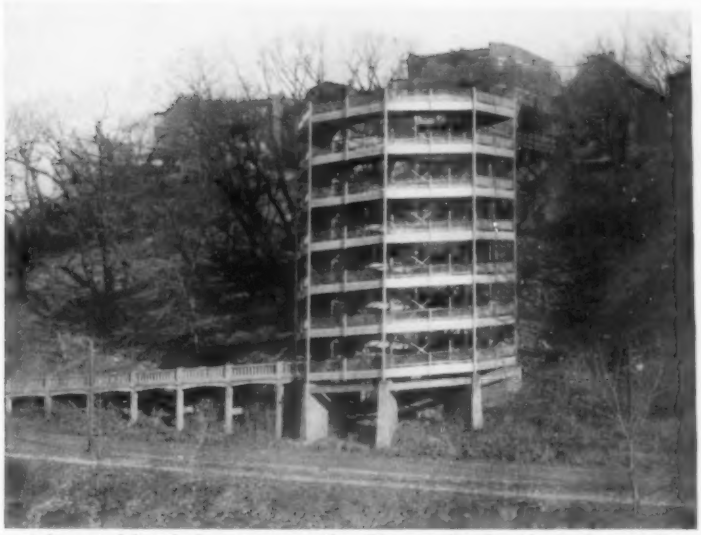
Peak Load Arrangement

Many cases may arise where a peak load exceeds the reasonable limit of gas production and storage. In such cases the inclusion of a small peak load unit of low cost for use during short periods may be warranted. This relatively small expenditure may fill the requirements of the proposed service and render practicable a plan of power utilization.

The adaptability of sludge gas power production to any plant must be carefully examined, for each plant, along the lines of these basic considerations and such factors as plant size, local conditions, usability, revenue, and other vital considerations which may militate against its success. Frequently, however, a special plan can be developed, after initial examination of the more obvious schemes, which will prove practicable and justify the installation. Since it is considered that the various factors can best be illustrated by a test case, certain basic assumptions will be made and plans developed thereon. An attempt to utilize the sludge gas for the sole purpose of advertising the conversion of a waste product with power and usable heat is rarely justified. On the other hand, some local resistance may be encountered in an attempt to install a power plant which has been carefully planned and is obviously practicable.

Next month Mr. Taylor will carry his discussion further by analyzing the characteristics of a typical installation.

The Klondyke Ramp



Schenectady's spiral ramp connecting Pleasant Road with the intersection of Strong and Mumford Streets.

Circular Walk at Schenectady, N. Y., Solves a Troublesome Pedestrian Problem

By L. C. Purdy
City Engineer

FOR about 25 years prior to 1930, the city of Schenectady had maintained what was known as the Klondyke Stairs, which connected two streets separated by a steep side-slope. These stairs were used daily by a large number of pedestrians as a short cut. In a "bee-line," the distance between the streets was 530 feet, and the difference in elevation was 110 feet. It was practically impossible to maintain these stairs in a satisfactory condition, and it was deemed inadvisable to rebuild them because the side-hill slope along and up which they were built had a tendency to slip. The numerous flights of steps were a handicap for elderly people and small children.

Designed in 1930

With these and other considerations in mind, the plans were drawn and a contract awarded in 1930 for an entirely new scheme, that of constructing a ramp on an easy grade in a different location and without any steps whatsoever. The ramp starts as a concrete walk constructed on an ascending grade for a distance of about 300 feet. Then, because the ground is lower than the constantly ascending grade of the walk or ramp, it is carried on a reinforced concrete trestle for a further distance of about 180 feet to what has been termed, for want of a better name, a spiral ramp. This spiral ramp is located near the edge of the Pleasant Valley Park road at the foot of the steep side slope which rises to Strong Street at a place nearly opposite the head or top of the old Klondyke stairs. It is an octagonal steel tower 50 feet in outside diameter and 64 feet high, supported on eight concrete piers. The passageway or walk for pedestrians is 7½ feet in clear width, winding and rising upward inside the outer rim of the spiral from the lower landing at the end of the concrete trestle approach on an 8 per cent grade to the top landing which opens onto a structural steel bridge which, on an ascending grade, connects the top of the spiral ramp with Strong Street. There are 6¾ turns in the spiral ramp between the top and the bottom. The headroom in the spiral ramp is slightly more than eight feet. The bridge between the top of the spiral ramp and Strong Street is supported on two bents, which in turn are supported on concrete piers.

Walk 1,580 Feet

Persons using the Klondyke Ramp walk about 1,580 feet or about three-tenths of a mile on a steep grade of 7 per cent to overcome the difference in elevation. It is much easier to clean snow from the ramp than from the old stairs, and the railing along the ramp affords more of a protection against slipping in unfavorable weather than on ordinary walks on the same grade.

This structure was constructed by Dubois Bennett and Son of Schenectady, N. Y., at a total cost of $45,584. The work was performed under the supervision of the then City Engineer, Frank Lanagan.

Emergency Revisions of Asphalt Specifications

RECOMMENDATIONS No. 61 of the Petroleum Coordinator for War limits the number of asphalt grades. In order to conform with this limitation, The Asphalt Institute, 801 Second Ave., New York, has made the necessary changes in its various construction specifications and issued them in pamphlet form with the title "Construction Specifications — Emergency Revisions of The Asphalt Institute Construction Specifications."

These copies are available to recognized engineers and municipal officials without charge upon request to The Asphalt Institute.

NOW AT SOLDIER CITY—
"SOFT WATER BY PERMUTIT"

After the war, your city, too, can enjoy good water—plan it now!

Camps are like good-sized cities—they need good water. Permutit* equipment is helping to supply many of them with soft, clear, iron-free water for post hospitals, laundries, kitchens, swimming pools, power plants—as well as for general community use.

That's why Permutit cannot now supply installations for *your* city. But when Victory is won, Permutit equipment—more practical and economical than ever—will be available for *every* municipality. Prepare *now* for this public improvement in your community. Just drop a line to The Permutit Company, Dept. G3, 330 West 42nd St., New York, N. Y. In Canada: Permutit Company of Canada, Ltd. . . . Montreal . . . Toronto . . . Winnipeg . . . Calgary.

*Trademark Reg. U. S. Pat. Off.

PERMUTIT

WATER CONDITIONING HEADQUARTERS

Business and Government in the Post-War Years

By Eric A. Johnston
President, Chamber of Commerce of the United States

CAPITALISM has been the greatest force the world has ever known for increased production. Labor in the future could greatly help to make that force even more successful.

But business also must open its eyes to newer and better performance.

The President recently abolished the WPA. Why did he ever establish it? Because business was not giving full employment. If business again fails to give full employment, there will be another WPA. This will be so under any president. The first president ever to do anything of any importance for the relief of the unemployed during a depression was a Republican, Herbert Hoover. He set the precedent. The precedent has grown. Public indignation against unemployment, against its misery of body, against its misery of mind, has grown. No American president will ever again permit American citizens to be unemployed. They will be employed by business or they will be employed by the government.

I say that business can employ all American citizens except those needed for absolutely necessary governmental function. It can do it if it plans for it.

There are two unpopular words. One is capitalism, which is hated in certain quarters. I am nevertheless for it. The other is planning, which is hated in certain other quarters. I am nevertheless for it. I say that business, if it wants to escape from being taxed for another and larger WPA, must *plan;* and it must plan on a scale of which it has never before been dreamed.

It has always planned for its own individual enterprises. It must now plan for nation-wide projects by whole industries.

It must look, for instance, at the horrible houses and at the vast wretched, unwholesome, substandard residential areas in which millions of American citizens still live; and it must say:

"To change all this squalor and ugliness into decency and sightliness is a job meaning billions of dollars of business. It cannot be done small. It has to be done big. It has to be done through cooperation among a lot of different elements. There are the manufacturers of standard building materials. There are the laboratory designers of new and more economical building materials. There are the wholesale and retail dealers in building materials. There are the architects. There are the engineers, contractors, building-trade unions, financing agencies, savings banks, building and loan associations. We have been puttering at this job, everybody by himself, and not getting it done. Now we will make organizations which will include representatives of all elements of housing production and we will produce housing at a private cooperative consolidated cost that will baffle all the public planners in the whole of Washington. Some of them would like to do all this building. We will do it first—and better. We will stop railing at the government. We will start outthinking it and outdoing it and outstripping it."

And there are quite a few other big national-scale jobs for business to plan. Consider our railroads. To give this country a really modern railroad system, a system as good in all its parts as it now is in its best parts, would mean at least ten billion dollars of business contracts.

To modernize everything in this country would mean so many billions of dollars that business could not get through earning them and spending them in 20 years.

We need again the spirit of the pioneers. Only this time it must be a planned and organized spirit. I say to businessmen: Do the planning and the organizing that is worthy of your freedom or there will be no more freedom and no more businessmen.

But I also say on behalf of businessmen: They cannot plan, they cannot organize, they cannot maintain a free system, unless they get one definite concession from labor and from government. It is this:

Business must be allowed to keep enough savings, enough profits, enough new capital, to be able to go ahead into new investments, new adventures, new services.

Free private business is like a motorcycle. It must move. If it stops, for lack of gasoline, it topples. And then, I repeat, there is only totalitarian governmentalism.

We stand at a solemn parting of the ways. Our business leaders and our labor leaders want freedom. No American wants slavery. But what is the price of freedom? I say it is the capital with which to operate capitalism. The word is capitalism.

—Excerpts from "Your Stake in Capitalism," leading article in *The Reader's Digest* for February 1943.

Agreement as to Essentials Goals

Where to draw the line between public and private activities for building better cities and advancing the general welfare will be a challenging post-war problem. Solution will be aided by agreement as to essential goals, coupled with a will to reach those goals through the friendly cooperation of business and government as each can best serve the public interest.

Two excellent recent statements—one by a leading American industrialist, and the other by a British Lord Mayor, himself likewise a business leader—are printed on this page. Both agree that a higher standard of welfare for the masses of the people can be and must be attained after the war has been won. Both agree that involuntary unemployment must not be allowed to return, and that, to the extent that private enterprise cannot provide jobs and decent living conditions for all workers, the winning of that goal must become the responsibility of public agencies.

By Norman Tiptaft
Lord Mayor (1941-42)
Birmingham, England

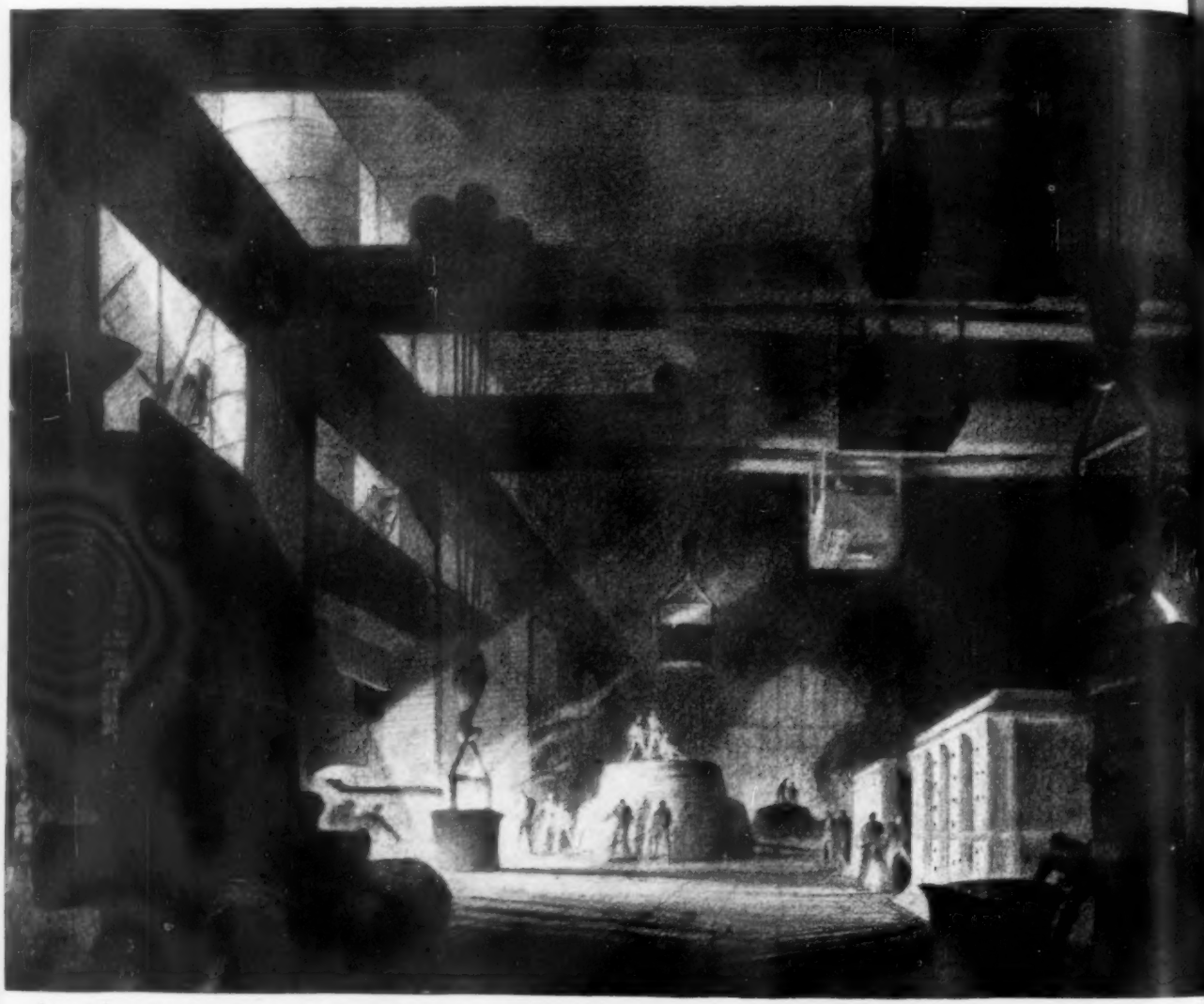
I HAVE never advocated that a public authority should do anything merely because it is a public authority. I believe in individual initiative, individual enterprise. They have carried this country a long way; but if they fail to produce some service necessary to maintain people in health, then the State or the local authority or both must step in. . . .

In post-war days, we shall need the organized brain, muscle, and goodwill of all sections of the community. It is as much the concern of trade unionism to improve efficiency as to ensure high wages and decent working conditions. . . .

It is certain that the cost of recon-

Pipe founders plus

You may know us as America's largest producer of cast iron pipe but not be aware that we have exceptional facilities to cast and completely machine special castings in accordance with engineers' designs and specifications. Many of them, now — machine tool, marine engine and dry dock castings—are being made for the furtherance of the war effort. Our special castings foundries, and a specialized plant for the manufacture of fittings, are equipped to meet unusual industrial requirements, particularly in the process industries, as well as in the water supply, gas and sewerage fields. Our technical and laboratory staffs are experienced and resourceful. We invite you to take up with us any problems you may have in connection with the design of pipe, fittings or special castings for present or post-war requirements.



A special castings foundry at one of our plants, drawn by Hugh Ferriss.

UNITED STATES PIPE & FOUNDRY CO.

General Offices: Burlington, New Jersey. *Plants and Sales Offices throughout the U. S. A.*

struction will be fabulously heavy. It is equally certain that it will be cheaper to employ the whole of our labor as completely as we are doing in the war effort, rather than to leave millions unemployed. . . .

If Democracy is to be worth while after the war, the acid test of its efficiency will be how far it prohibits every vested interest, either of capital or labor, from exploiting the community.

The community has been held up to ransom in the past by monopolistic manufacturers, by land owners, by gentlemen wearing the old-school-tie, appointed to government jobs for which they were entirely unfit; but it is equally true, that Democracy has been held up to ransom by workers who believe in ca canny, rather than giving their best; and by an anti-social scrounging element, prepared to do anything but work, and yet demanding to be maintained.

Democracy has to control all parasites, rich and poor alike. Such control means restriction. Any idea that at the end of the war, we can all sit back and take life easily is false.

The end of the war does not mean the automatic creation of the New Jerusalem. It only means that its builders, faced by a shortage of material, by a difficult financial situation, with a tired lot of laborers, will need to work harder and on bigger lines than ever before.

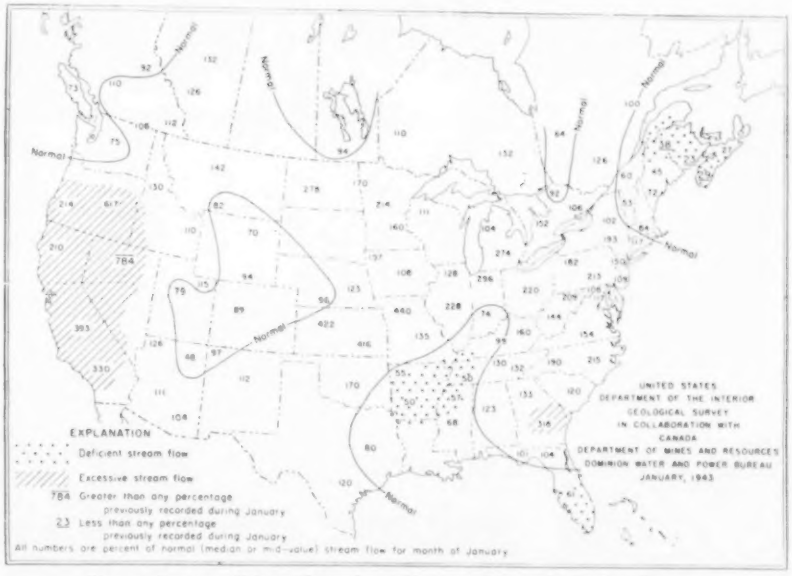
The bugles that sound the Armistice will be no call to a delightful siesta on a summer's afternoon. They will sound an advance over difficult country, under hard conditions to a new and strenuous campaign. But because we, in our generation, have seen two wars, we have made up our minds that our children and our children's children shall not see them.

Because we have learned of the misery of our distressed areas, and the tragedy of our unemployed, we mean that there shall be no distressed areas, and no unemployed when this job is over. Because we have seen the ill-health and disease of our people caused by living in slums, we mean that there shall be no slums after this war; and because we have seen the tragedy of poverty, and the hopelessness of the bottom dog, we mean that everybody shall have enough to live on, even if there be no surplus for the rich.

It means work, sacrifice, struggle. But if we are prepared to do that work, to make that sacrifice, to continue that struggle, we know as well as anything can be known that in the days to come, we shall build a land worthy of living in, for a people worthy to live in it.

—From *The Lord Mayor Said*, a 120-page pamphlet by Norman Tiptaft (21 St. Paul's Square, Birmingham 3, England).

U. S. Water Resources—January


Normal
EXPLANATION
Deficient stream flow
Excessive stream flow
784 Greater than any percentage previously recorded during January
23 Less than any percentage previously recorded during January
All numbers are percent of normal (median or mid-value) stream flow for month of January
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
IN COLLABORATION WITH
CANADA
DEPARTMENT OF MINES AND RESOURCES
DOMINION WATER AND POWER BUREAU
JANUARY, 1943

Stream flow conditions throughout U. S. and Canada during January.

WATER supply throughout the United States maintained a gen- erally fair condition during the m of January, although subno stream-flow conditions were prev in the south-central states, lower ida, and northern Maine, and floods occurred on portions of the West Coast. This is according to the latest monthly report on water resources issued by the U. S. Department of Interior Geological Survey.

Ground water conditions are reported favorable throughout the coun- local areas subject to ive pumping. Stor- low normal in parts Carolina, Florida, diana, Arizona, Nevada, and Washington. It is high in the Plains States and in some parts of the Atlantic coast states.

Unusual storms produced floods along the Pacific Coast and an exceptionally large run-off in the state of Nevada.

Price Control on a Water-Works Project

(*Continued from page 41*)

diameter and almost three miles long, to connect the water plant to the distribution system. In addition, a new 24-inch line extended from the end of the 36-inch main through the city to support existing mains and other vital areas.

A number of 16-inch and 12-inch mains were included to serve military and war industry centers and to eliminate bottlenecks in the old system. Smaller mains were installed to serve the residential areas not heretofore served by city water.

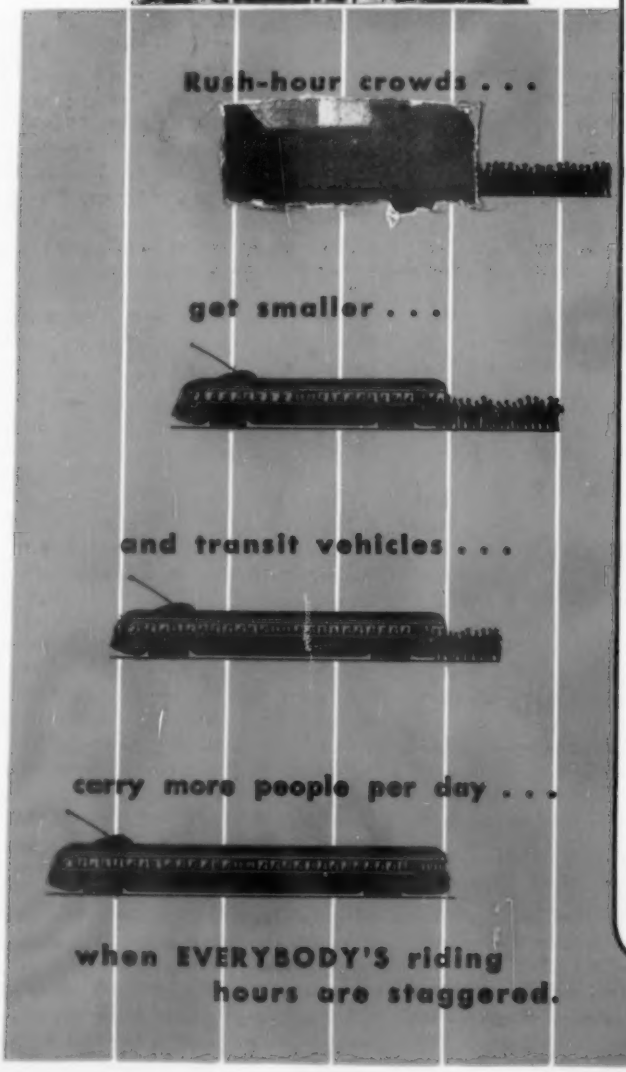
Pressures and Services Improved

The result of the additional mains is indeed impressive. Formerly pressures of 115 to 117 pounds per square inch at the pumping station were necessary to deliver a net of 13.6 million gallons per day into the system. Now almost 15 mgd are delivered at approximately 70 pounds per square inch at the pumping station. In addition, adequate pressure is now available at extremities of the system, whereas previously some faucets would "suck" air instead of delivering water when opened. Also, fire service is improved by the supporting mains.

Although the contract for laying water mains is complete, many phases of the entire project are not finished. War priorities have held up the delivery of the proposed 1.5 mg elevated tank and the construction of a clear well at the main pumping station. Improvements at the pumping station and the filter plant are contemplated, but the improvements completed to date have "saved the day" for Tampa.

Is Your City Getting MAXIMUM BENEFITS FROM STAGGERED HOURS?

Rush-hour riding peaks can be cut down—but not with half-hearted plans. Adopt an all-out, city-wide staggered-hours plan, and you'll cut the peaks by as much as 35 per cent.


Rush-hour crowds . . .
get smaller . . .
and transit vehicles . . .
carry more people per day . . .
when EVERYBODY'S riding hours are staggered.

IN the many cities that have staggered at least some of their riding hours, public-transit peak loads have been noticeably reduced. These cities all report increases in the capacity of their transit facilities during the critical rush hours—increases ranging from 3 per cent to as high as 35 per cent.

But why is it that some cities have benefited more than others?

The answer is demonstrated in the little illustrations at left. As more people go on staggered hours, the street cars and buses can carry more people per day.

For example, in a city that reported only a 3 per-cent increase, only the schools are operating on staggered hours. But in a city that reported a 35 per-cent increase in transit capacity, a city-wide plan of staggered hours is in operation. Retail establishments, schools, office workers, and industrial workers all have their working hours dovetailed in accordance with a central plan, worked out under the leadership of a Co-ordinator of Defense Transportation.

Stringent gasoline rationing and the shortage of transit vehicles have already made themselves felt in almost every American city. But before a transit operator can get additional vehicles, he must prove to the Government that he is making full use of his present equipment by means of city-wide staggered hours.

Before the situation gets out of hand—before vital war workers are unable to get to their jobs—be sure that your city is operating under a comprehensive staggered-hours plan. Don't be content with half-way measures. Make it city-wide. *General Electric Company, Schenectady, N. Y.*

GENERAL ELECTRIC

107-85-8540

Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

Merwyn A. Kraft, Chairman; Virden A. Rittgers, Vice-Chairman; David M. Baldwin, Martin E. Bruening, Stephen Butterfield, Edgar F. Copell, John E. Ecker, Fred W. Fisch, Emmett E. Kirwan, Foster M. Kunz, Alger F. Malo, Walter W. Matthews, John R. Moriarty, Henry W. Osborne, I. S. Shattuck, Matthew C. Stelskt, Richard Siver, John L. Towers

Brighter Traffic Signs for Less Money

By Ross C. Harger
Assistant Traffic Engineer
Detroit, Mich.

"THERE is no great loss but some small gain." Day by day the wisdom of this old adage becomes more apparent as citizens, industrialists, and public officials scurry madly around attemping to find substitutions for types of equipment, materials, and even food, which until Pearl Harbor had been considered unquestionably necessary.

Now this is all changed. The seemingly inexhaustible supplies of many of these materials have been earmarked exclusively for use in winning this great war. Wherever possible, even in the production of essential equipment, substitutions must be made. Creative minds are being put to their most severe test in producing these substitutes and, oddly enough, *many of these substitutes are proving to be more economical, more serviceable, and more effective than the original.*

Along with everyone else, the traffic engineer has not been overlooked by the "pinch" of raw materials. His work is vital to the war effort. Workers must get to work by street-car, bus, or automobile. Those great truck loads of war materials must proceed with least delay, and often parking must be prohibited near war plants where the mere presence of hundreds of parked cars assists the saboteur and hinders free movement of fire and other emergency vehicles.

White Paint

Yet the traffic engineer must scratch his head and find non-critical materials from which to manufacture his tools. Traffic signals with aluminum castings and copper wire are practically non-existent. Yellow traffic paint contains chrome —unavailable. So the engineer starts using white paint and likes it. He finds that white paint wears as well as yellow. The daytime visibility of white paint is just as good, and his tests show that the nighttime visibility is even a little better than yellow, so he concludes that after the war is over he will continue to use this white street paint.

Signs likewise. Two years ago he wouldn't think of making traffic signs of anything but steel. Now he finds that substitutes such as masonite or gypsum board are light, durable, weatherproof, easy to work with, and only about one-half as expensive as steel. So he decides that after the war he will keep right on using these materials for many of his traffic signs. He finds substitutes for other sign materials such as stanchions on which to install the signs and reflectorizing materials with which to produce night visibility.

Night and day views of a new gypsum board Stop sign reflectorized with Scotchlite and mounted on a wood pole. The only metal used is two lag screws fastening the sign to the post.

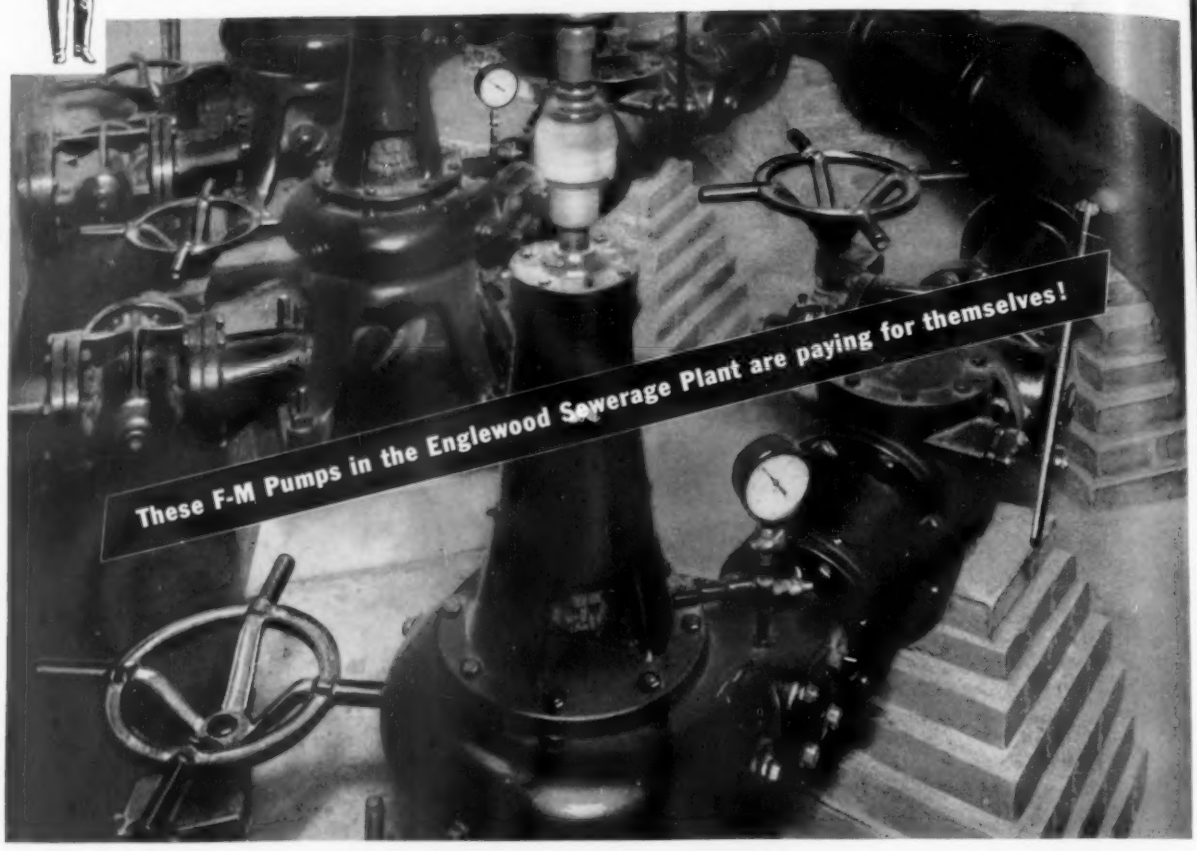
Detroit's New Stop Signs

In all traffic work the STOP sign is regarded by the traffic engineer as the most important sign at his disposal. It is the one sign which flashes a warning as well as indicates the law. By the use of this sign the traffic engineer corrects many hazardous conditions as well as establishes long sections of through streets over which vehicles may pass without having their progress continually interrupted by cross traffic. This type of street is especially important today in a city such as Detroit where all traffic is so vital and where the movement of all men and materials must take place on the surface due to the lack of elevated or subway facilities.

It was, therefore, extremely important that the traffic officials of Detroit take immediate steps to find suitable substitutes for STOP sign materials so that the installation of new through streets and the rejuvenation of old STOP signs would not be retarded.

The first task was the selection of sign material. Gypsum board one quarter of an inch thick was chosen. This is a hard-pressed fibrous material which may be handled like wood. It

WHO PAYS FOR NEW PUMPS?



Englewood, N. J., recently assumed ownership of a sewerage plant that for years had been privately owned. The first step after taking over was to replace obsolete equipment. Increased efficiency of the new equipment, as compared to that which it replaced, has already shown a *ten per cent* reduction to the city in the cost of sewage handling. At this rate, they will soon pay for themselves.

The entire new installation was planned with an eye on the future. Three Fairbanks-Morse units were installed with other new equipment. Two of these are 4″ Fig. 5412 vertical sewage pumps with 500 and 700 gallons per minute respectively and one is a Fairbanks-Morse 5″ Fig. 5413 vertical sewage pump with 1200 gallons per minute capacity.

Every city official realizes that the war will be over long before the war bill is paid. The fact, therefore, that old pumps frequently cost more to retain than to replace provides the avenue for savings which can help ease the postwar tax burden for your citizens. New equipment for modernization is not available now, but plans for modernizing should be made now so that "tax relief" can be passed on to citizens as soon as possible after the war. To that end, your resident Fairbanks-Morse engineer will co-operate and work with city officials and engineers. To meet him, write Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago, Illinois.

FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
MOTORS
GENERATORS
SCALES

WATER SYSTEMS
FARM EQUIPMENT
STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

Pumps

is usually delivered in 4 x 12-foot sheets. After sawing to octagonal shape, it is passed through a jointer equipped with a cutter designed to produce a round edge on the sign. The elimination of sharp edges makes it possible to cover the edges perfectly with paint.

The sign is now ready for three coats of paint. The first coat is a varnish-like sealer which seals all pores and adds to the life of the sign by weather-proofing. The second coat is a primer of yellow paint. In order to obtain a thorough coverage, these first two coats are applied by dipping. The final coat is obtained by spraying with standard Federal yellow enamel. A hard glossy surface ensues.

Full Reflectorizing

The next step is to apply the reflectorizing material. A glass beaded sheeting manufactured under the trade name of "Scotchlite" * has been selected. This is available in rolls or in cut-to-size sheets, plain or stenciled. It is composed of countless glass beads set in a silver-like binder and having high-intensity, light-reflectorizing characteristics. The back of this material is covered by an adhesive which, when wet by a suitable solvent, becomes very sticky. In this condition a piece of Scotchlite 9 x 24 inches is applied to the center panel of a 24-inch STOP sign to which it adheres permanently. The word STOP is next stenciled on the Scotchlite in 6-inch letters, and the sign is ready to be installed.

Wood Stanchion

When installing this sign it is necessary that a suitable support be provided. Unless there is a telephone or street-light pole in approximately the required location, it is necessary to erect a stanchion. Formerly a 2-inch iron pipe served—now unavailable. A 4 x 4-inch wood post is a suitable substitute. For appearance, it is given a slight taper on the top, and then three coats of green paint are applied by dipping. A hole is dug in the desired location, 30 inches deep and 20 inches square. The post is placed in position and the hole filled with concrete. For preservation, the lower 30 inches of this stanchion are dipped in creosote before painting.

The sign is attached to the stanchion by two lag screws or bolts, one at the top and one at the bottom—the only metal in the assembly. Not only does this installation strictly conserve critical materials, but it presents a neat and authoritative appearance as well. The day and night views of a typical installation of this type are shown in the first photograph.

* "Scotchlite" is a trade name of the Minnesota Mining & Manufacturing Company, St. Paul, Minn.

Illustrating the manner in which an old Stop sign is reclaimed by mounting a new Scotchlite panel over the holes in the sign from which the old reflector buttons have been removed.

Rejuvenating Detroit's Old Signs

Another common problem facing all traffic engineers today is to determine a method by which old STOP signs may be rehabilitated. The useful life of such a sign is determined by the life of the paint and the reflector elements. With the glass reflector buttons and ordinary paint, this life will average four to five years. It is, therefore, necessary to bring in many of these signs every year, recondition them and again put them into service. The old paint is easily boiled off in an acid bath, and new paint may be applied. However, glass reflector buttons are no longer available because an aluminum housing was used on each one of these buttons to produce the reflectorizing characteristics. A substitute reflector must be used and the city of Detroit solved the problem by again resorting to Scotchlite.

The old sign is brought in from the field and completely dismantled. All metal, with the exception of the octagonal piece, is contributed to the scrap drive. This latter piece is submitted to the acid bath to strip the paint and it is then repainted. A piece of Gypsum board 9 x 24 inches is prepared and one surface is covered with Scotchlite on which the word STOP is stenciled. This is placed in position on the center panel of the old repainted sign and secured by small bolts or rivets. The sign is again ready to be placed on the street. The second photograph illustrates how this assembly is made.

So far, nothing has been said regarding the cost of this new sign versus that of the old or of the cost of rehabilitaing the old signs. Perhaps these comparisons can best be made by presentation in tabular form.

COST TO MANUFACTURE NEW SIGNS OF TWO TYPES

	Old-Style "Button" Sign	New Style "Scotchlite" Sign
Sign:		
Backboard	$1.35	$ .46
Reflectorizing Material	2.58	.70
Paint	.20	.24
Hanger	.19	.05
Labor	2.02	.22
Stanchion:		
Post	$1.90	$1.59
Paint	.05	.07
Labor	.14	.05
Total	$8.43	$3.34

It costs $3.83 to repaint and replace reflector buttons in an old STOP sign. An equally or more effective job of rehabilitating this old sign by the use of Scotchlite may be done for approximately $1.45.

Weighing our experience develops these deductions:

1. The new assembly contains the minimum in critical materials.

2. The new sign is as neat and attractive as the old and, because of the greater area of reflectorizing material employed on the new sign, the reflecting ability, readability, and the target value are considerably improved.

3. In the new sign, manufacturing costs have been reduced 60 per cent by the use of less expensive materials and by a saving in many man hours of labor as well.

The natural question that follows is "Why ever consider a return to the use of the old style STOP sign?" So far as the city of Detroit is concerned, *at the present time* the answer to this question is "We won't."

Chicago Saves $200,000 a Year with New Signs

Chicago is changing its 7,000 "Stop" and "Slow" traffic warning signals from battery-lighted flicker signs to glass-beaded reflectors, finding them more economical and just as safe, says the American Public Works Association. The reflector signals, costing $3.08 each, are expected to save the city $200,000 a year in maintenance costs. Warning arrows on street-car safety islands, also formerly flicker-lighted, are being changed to reflectors. No accidents have been traceable directly to the new signs, which are visible at 500 feet.

Danger Zone

So that three street cars may load passengers at one time, thus speeding up transportation, elongated pedestrian zones have been installed in downtown Los Angeles. These zones sometimes extend past driveway entrances to buildings or parking lots. Since drivers have been observed crossing the painted lines of these extended areas, the Los Angeles Police Department warns that it is illegal to drive through any pedestrian safety zone under any conditions.

Water Main Cleaning is a Job for Specialists!

Looks easy, doesn't it? But you've got to know how and you've got to have just the right tools. Each job is different. None of 'em are too tough for us because our exclusive methods and specials tools are the result of years of specialized experience in this field.

FLEXIBLE UNDERGROUND PIPE-CLEANING CO.

9059 Venice Boulevard, Los Angeles, Calif.

401 BROADWAY, NEW YORK • 1624 HARMON PLACE, MINNEAPOLIS • PICKWICK BLDG., KANSAS CITY

Are You Responsible

for Public Property?

CUPRINOL Stops Rot!

Wood rot, above ground or below, can soon ruin the best of construction. Fence posts, dipped in Cuprinol, will have long firm life without rot or decay—for Cuprinol permeates the wood fibres and eliminates the nourishment on which rot and insect borers feed.

Use it for all wood construction, by brush, spray or dipping. Use it by itself, or as a priming coat under paint. Cuprinol is harmless to handle, will not leach out, and once in the wood it's there for good.

Cuprinol is available for Wood; for Fabrics; Ropes; and Nets. Write for information.

CUPRINOL, Inc., 26 Spring Lane, Boston, Mass.

THOMPSON MATERIALS & EQUIPMENT FOR MUNICIPALITIES

★ CONCRETE CURING MATERIALS
- Hunt Process
- Ritecure
- Cotton & Fibre Mats
- Salt Hay
- Paper

★ BITUMINOUS MATERIALS
- Emulsions—Cutbacks
- Waterproofing
- Penetration
- Joint Filler

★ EXPANSION JOINTS
- Bituminous—Fibre
- Asphalt
- Cork
- Wood
- Rubber Latex

★ MISCELLANEOUS ITEMS
- Joint Supports
- Joint Caps
- Carbon Black
- Tarpaulins

★ THOMPSON SPRAY MACHINES
- New and Rentals

Write for illustrated literature and estimates

THOMPSON MATERIALS CORPORATION

Sales Office: 204 West St., N. Y. C.
General Office: 303 Cortlandt St., Belleville, N. J.

AFTER THE WAR

KEEP YOUR CITY CLEAN

WITH "THE MACHINE OF A DOZEN USES"

ETNYRE SANITARY STREET FLUSHERS

E. D. ETNYRE & CO., OREGON, ILLINOIS

A New Deal for Traffic Signals and Signs

THE jar which ODT Director Joseph B. Eastman gave many city officials on February 9, when in Washington he had to tell them how to reset their traffic signals to fit new traffic conditions, was needed—war or no war.

The traffic signal was developed to facilitate the movement of motor traffic at intersections, by allotting alternate periods of flow to the vehicles on each of the intersecting streets. The fixed-time signal soon became the standard traffic signal and maintained its position despite subsequent improvements such as the progressive system, by which a definite vehicle speed takes the car through the system without getting a red signal, and the vehicle-actuated signal which operates when needed, instead of every 30 seconds or so whether or not there is any waiting cross traffic.

OCD's Directions

For years the American Automobile Association contended that there were 30 per cent more traffic lights than conditions warranted. On February 9, Mr. Eastman said: "Adjustments in traffic control methods have not kept pace with changing conditions." His directions follow:

The operation of traffic signals should be discontinued where traffic falls below these accepted minimum standards:

(a) Total traffic entering the intersection from all directions should average at least 1,000 vehicles an hour for 8 hours, of which at least 250 enter from the minor street, or (b) Pedestrians crossing the major street should average at least 300 an hour for at least 6 hours a day, and vehicles entering the intersection from the major street should average at least 750 an hour for the same 6 hours.

Flashing Lights—A traffic signal justified for STOP and GO operation during part of the day should, however, be operated as a flashing signal when, for a period of four or more consecutive hours, traffic falls below 500 vehicles an hour, or in the case of a pedestrian protection signal, below 372 vehicles an hour on the major street or 150 pedestrians an hour crossing the major street.

Shortened Signal Cycles—Signal cycles should be as short as possible. At the usual intersection, cycles of from 35 to 50 seconds should be enough. Slightly longer cycles may be desirable in coordinated systems, or where block lengths are irregular, or at unusually complicated intersections, or to expedite vehicles.

Adjustment of Green Period—The proportion of the cycle devoted to the green period should conform to the relative volume of traffic per lane on each street, except that special consideration should be given to buses, street-cars and trucks.

Timing Variations—Where traffic volume fluctuates widely during the day, cycle length or the division of the cycle should be altered at the appropriate times.

Progressive Signal Operation—Fixed time signals within one-quarter mile of one another, and controlling the same roadway, should be coordinated to provide progressive traffic movement and reduce the number of vehicle stops.

Traffic Police—Assignments of traffic police to fixed posts should make most effective use of manpower. Traffic police should not be assigned to signalized intersections except where pedestrians or turning vehicles are unusually numerous.

Police Control of Traffic Movement—Traffic officers should keep their STOP GO periods as short as possible to reduce delays. When special circumstances require an officer to control traffic at the center of a signalized intersection, lights should be turned off. Special effort should be made to expedite buses, street-cars, and trucks on routes serving war plants.

Elimination of Unnecessary Stop Signs—Stop signs should be removed except from locations where warning signs would be inadequate, such as at intersections where greatly restricted view or accident records indicate a need, at intersections along a legally designated "through" street or highway, and at railroad crossings where a stop is required by law.

Traffic Regulations—Traffic regulations, such as those governing turning restrictions, "through" streets, and parking, should be reviewed and revised to expedite vehicle movements where the war has either increased or decreased traffic.

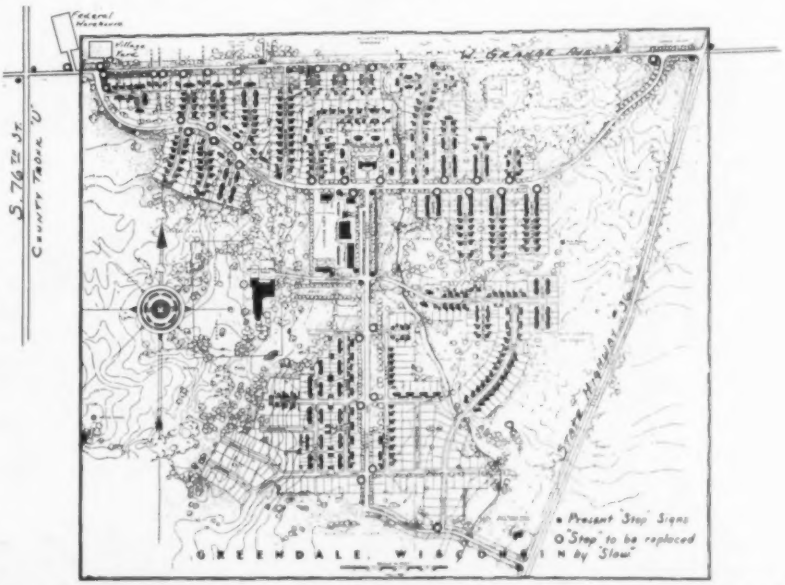
War Transportation Routes—A system of primary war transportation routes, to which preferred traffic control treatment would be given should be designated in every municipality. Such routes should consider the needs of both workers and vehicles carrying war materials.

Traffic-Control Equipment — Traffic-control equipment requires critical materials. Therefore every effort must be exerted to use most effectively the equipment already on hand before applying to government agencies for assistance in the purchase of new equipment.

Each start and stop uses 1/32-gallon of gasoline and 1/30-ounce of rubber tire, says the Automobile Association. In a normal year this is a use of 2.7 billion gallons of gasoline and 90,000 tons of rubber. No doubt about the incentive to act NOW.

Commenting editorially on these war traffic regulations, *The New York Times* said: "It may well be that permanent improvements in the system of traffic signals and their management will be discovered as a result of what at the moment is an emergency measure."

After trimming and readjusting present signal and sign systems in accordance with present traffic, it would be worth while for mayors, police chiefs, and commissioners, public safety commissioners and city engineers to study traffic signals and signs as they will be available after the war and without regard to past prejudices and prices. The system that slows traffic least while maintaining the highest degree of safety is likely to be the least expensive system for the public.



Greendale, Wis., population 2,500, has replaced STOP with SLOW on 37 traffic signs at a cost of 75 cents per sign. Fewer automobiles and larger bus loads made this change desirable in the interest of gasoline and tire economies, writes Walter E. Kroening, Village Manager.

NEW SMOOTH SURFACE STREET LIGHTING GLOBE

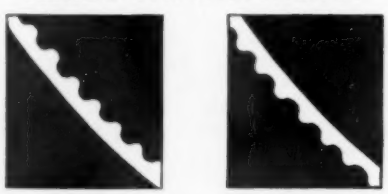
The new *Smooth Surface* street lighting globe—an exclusive Westinghouse development—permits faster maintenance. The time required for cleaning and drying has been shown to be half that of rough surface globes.

The newly designed globe has a smooth *outside* surface with rectilinear configuration on the inside for light diffusion. Its smooth outside surface retards the collection of normal dust and dirt, because there are no grooves to accumulate smoke and grease film. Rain readily removes dry dirt, and when washing is necessary, a damp sponge will do the job.

In addition to relieving a maintenance problem, the new *Smooth Surface* globe has good optical properties; uniform mechanical strength, and, because it stays clean, maintains its light output over a longer period. The globe is available in two sizes—long and short. Both types are interchangeable with present Westinghouse Reflectolux glassware.

For more complete information on the new *Smooth Surface* globe, write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio. Plants in 25 cities: offices everywhere.

HERE'S THE DIFFERENCE



NEW **OLD**

New Westinghouse globes are of pressed glass construction. The outside is perfectly smooth while the inside is finished with a uniform pattern of rectilinear configurations, through which light rays are diffused. The result is a globe of brilliant and sparkling appearance that transmits light with maximum efficiency.

Westinghouse *Lighting Equipment*

Wartime Dimout and Public Safety

By Richard E. Simpson
State Defense Council, Hartford, Connecticut

A GENERATION ago we did not have a traffic problem and consequently we did not have a street-lighting problem, a fact that had a very great bearing on public safety. During the intervening years, changes in customs and conditions not only created an acute traffic problem, but also demonstrated that adequate public lighting is an important factor in its solution.

Again, a generation ago the result of traffic accidents in the form of death, injury, and property damage was not a matter of national concern. The succeeding years, however, witnessed an annually sustained increased toll from traffic accidents until of late years approximately 40,000 of our fellow citizens are killed, hundreds of thousands more are injured, and many millions of dollars lost annually in property damage.

More pertinent to our subject is the fact that the night proportion of traffic accidents increased much faster than the volume of night traffic. Lighting engineers were the first to perceive this trend and the first to recognize the inability of the prevailing street lighting to furnish the visibility necessary for a reasonable degree of public safety at night. The cluster of small incandescent lamps atop a pole, as well as the arc lamp, were superseded by the larger incandescent lamps with diffusing globes at higher mounting heights, and these in turn were followed by the reflector-refractive type of street-lighting luminaires.

Ten years ago there were few records that differentiated between day and night traffic accidents, nor was any analysis made of such vitally related subjects as traffic volume and the level of illumination. In many cities, since then, studies have been undertaken of the number of fatalities under various levels of illumination, but in making the studies little thought was given to the factor of traffic volume.

Pioneering

In some Connecticut cities the volume of traffic had been considered and given its due weight. Hartford's notable street-lighting modernization program did consider traffic volume. So did Bridgeport and New Haven later. In all three cities the street lighting on certain thoroughfares was modernized, while the lighting on other streets of similar character and volume was not changed. This provided a means of comparison of the accident experience on the same thoroughfares before and after relighting and at the same time a comparison on the "control streets" which had not been modernized. In the three cities, the level of illumination was raised from an average of 0.2 lumen per square foot to 0.7 lumen per square foot on approximately 50 miles of streets.

Over a five-year period there has been a reduction of 64 per cent in the number of night accidents, per unit of traffic volume, on the relighted streets of Hartford and only a 9.1 per cent reduction on the unchanged streets. In Bridgeport, the corresponding figures covering a two-year period were 42.2 per cent reduction on relighted streets and an increase of 10.4 per cent on the unchanged streets. In New Haven for one year the reduction was 57.3 per cent on relighted streets and an increase of 2.8 per cent on the unchanged streets.

The pedestrian benefit on relighted streets is represented by a 52 per cent drop in the number involved in night accidents as compared with a 30.1 per cent increase on streets with old lighting. Finally, there was a reduction of 68 per cent in the number of night fatailties on relighted streets and a 52.1 per cent increase on streets where old lighting was still in use.

This brief summary outlines some of the public benefits through the employment of modern street-lighting techniques which increase visibility at night threefold over that of earlier methods. Wherever adequate visibility was provided, there was a material and consistent reduction in night accidents involving property damage, personal injury, and fatalities, whereas those sections of the cities without this new level of visibility have had no improvement in night accident experience.

After Pearl Harbor

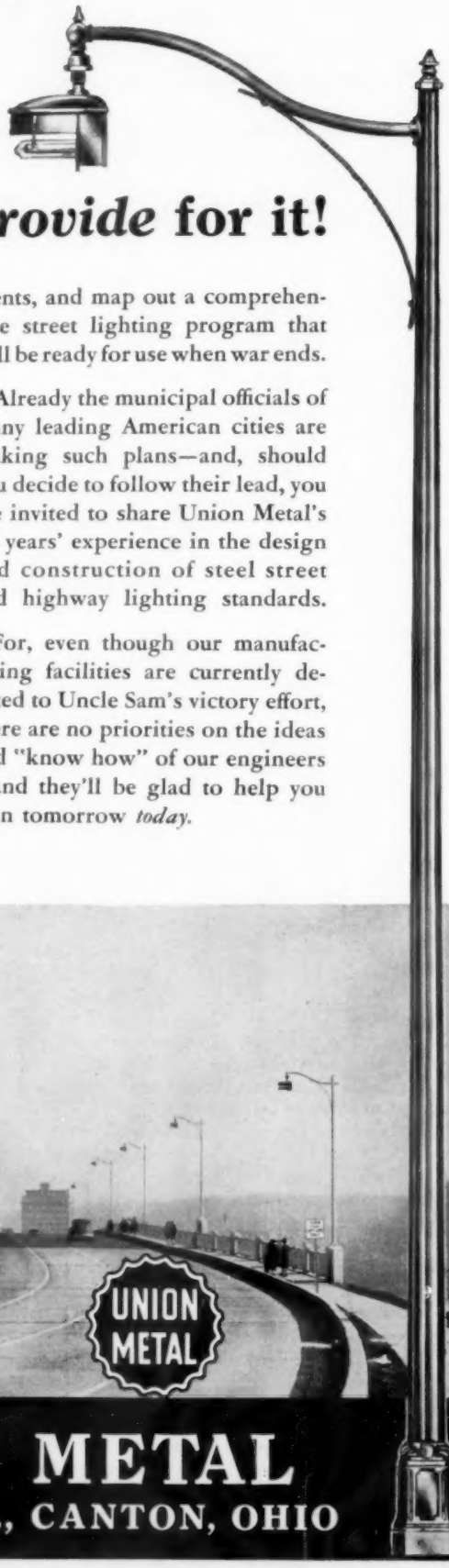
This was the situation with respect to street lighting in these three cities at the end of 1941. With the attack on Pearl Harbor, plans for continuing or expanding the program of street-lighting improvement had to be postponed. In fact, we were obliged to about-face by extinguishing, reducing in wattage, or shielding all forms of public and semi-public lighting. The requirements of the dimout brought about also the elimination of all advertising and sign lighting, a drastic reduction in display window illumination, and the severe curtailment of automobile lighting. Thus night visibility was reduced far below the level which previous experience had demonstrated was necessary for reasonable public safety under normal conditions.

New Hazards

But other conditions had changed, too. First was the rapid expansion of industrial employment in such centers of population as Bridgeport, Hartford, and New Haven. Inadequate housing facilities forced many of these new workers to seek living quarters in nearby towns. This at once caused a marked increase in the volume of traffic on the highways out of the cities as well as on the city thoroughfares leading to the industrial plants.

The great majority of the war industries work two or more shifts a day. This has brought a traffic peak between the hours of 10:30 P.M. and 12:30 A.M. of almost the same proportions as that which normally prevails between the hours of 4 P.M. and 6 P.M.

You Can't Measure the Future



But You Can *Provide* for it!

WILL your town retain its wartime growth when peace comes? Or will it settle back to the business and boundaries of 1939?

Perhaps you can't tell—yet. But there's one thing you *can* do. Big or small . . . industrial or agricultural . . . you can make sure *now* that your town in nineteen hundred-and-postwar will be properly lighted, as safe for your pedestrians and car owners after dark as it is in broad daylight.

Right now, while the installation of new and modern street lighting facilities is at a standstill because of the war . . . right now is the right time to study your requirements, and map out a comprehensive street lighting program that will be ready for use when war ends.

Already the municipal officials of many leading American cities are making such plans—and, should you decide to follow their lead, you are invited to share Union Metal's 36 years' experience in the design and construction of steel street and highway lighting standards.

For, even though our manufacturing facilities are currently devoted to Uncle Sam's victory effort, there are no priorities on the ideas and "know how" of our engineers —and they'll be glad to help you plan tomorrow *today*.

THE UNION METAL
MANUFACTURING CO., CANTON, OHIO

The second change was that of instituting the new "war time" as a year-round measure instead of for the summer months only. The most noticeable effect of this innovation was to transfer the late afternoon traffic peak into the daylight period throughout the year and the early morning peak into the dark period for four months of the year. Any comparison of before and after dimout accident data must take this change of time into consideration.

The third factor affecting traffic accidents during the dimout period is gasoline rationing. Throughout Connecticut, rationing decreased gasoline sales 32 per cent, and a consequent reduction of 39.5 per cent in traffic volume was noted. The greatest part of the reduced traffic volume was observed on recreational and through routes, with a lesser amount in suburban areas. Urban traffic was least affected.

An idea of the effect of these changes on traffic may be had by referring to the aircraft industries in the Hartford area. There were fewer than 4,000 employees in this industry at the end of 1939, while today the number is more than 40,000. Moving this number of employees into and out of the plants each day, in addition to the normal traffic flow, is the equivalent of evacuating a city the size of Waterbury, Conn., or Lowell, Mass., every twenty-four hours, except that the entire operation is confined to a period of five hours and, in the winter months, 60 per cent of the operation takes place during the hours of darkness. This daily transportation problem is dependent almost wholly on the use of private cars. To use public carriers would call for half the motor buses in the state.

There are four main routes leading to the plants, one of which was widened from a two-lane to a divided four-lane thoroughfare and this, as well as parts of some other routes, has modern street lighting. Bearing in mind the tremendous increase in traffic, it is not surprising that there has been a daytime increase of 131 per cent in the number of accidents per unit of traffic flow. What is surprising is the fact that, notwithstanding an even greater increase in night traffic, there was a decrease of 31 per cent in the night accident rate.

Results of Dimout

Today this entire area is affected by the recently issued dimout regulations; but this was not the case until the beginning of 1943 because it had earlier been impossible to obtain acceptable shielding equipment for the street lights. No accident statistics are yet available for the new conditions. New Haven and Bridgeport, however, have been dimmed out since June 1942, and it is possible to examine the accident records in these two cities for a period of six months before and six months after the measure was initiated. The dimming was effected by painting and shielding the luminaires, and the net result was a reduction of 50 per cent in the level of illumination. Its value was further reduced by the spottiness of the light on the street.

Although the actual number of both day and night accidents has gone down, the rate for the vehicle miles traveled is 21 per cent higher at night than it was before the dimout. Meanwhile, daylight accidents have dropped 15 per cent for New Haven and Bridgeport, based again on the actual amount of mileage. Lighter traffic and lower speeds explain the per-mile decline in day accidents, and the lowered visibility of the dimout is the explanation for the rise in the per-mile night accident rate.

Yet night accidents on streets that have recently been equipped with modern street lighting have risen after dimout only half as much as those on streets with the older style of illumination. This figure is gained from an examination of all streets in both cities for 1941 and 1942 and is based on the traffic volume in millions of vehicle miles.

One of the most significant trends under the different street-lighting conditions is that the number of pedestrians involved in night accidents has risen 49 per cent, comparing the two periods. Traffic fatalities do not necessarily constitute an accurate gauge of hazards unless large numbers are involved. Rather, they reflect the severity of the accidents and, at night, they include the factor of visibility provided for driver and pedestrian alike. This is borne out by the fact that, in normal times, more than two-thirds of the night fatal traffic accidents involve pedestrians, while in the daytime only one-fifth of the fatalities are pedestrians. To put it another way, approximately three-fourths of the pedestrian exposure is in the daytime.

Night fatal accidents declined a full 30 per cent in Connecticut during 1942. But *in the dimmed-out cities of New Haven and Bridgeport, night fatalities rose 8 per cent.* Meanwhile, daylight fatalities had decreased 77 per cent in these cities.

The trend indicates that lowered speeds and the lessened traffic volume brought about by gasoline rationing will effect a substantial reduction in the number of accidents. This has already been true in the combined figures for New Haven and Bridgeport. There were more than 40 per cent fewer day accidents in the two cities for the later period, shown in Table II. And the night accidents have declined almost 8 per cent.

The curtailment of advertising, display, and sign illumination, plus the reduction in street lights and automobile headlights, has had its effect already, particularly in the business areas. Taking into consideration the fewer millions of vehicle miles traveled, this has represented an increase of 21 per cent in the night accident rate. The dimout regulations now in force are more stringent than formerly. It is hardly likely that we can hope for an improved night accident picture in the dimmed-out areas of Connecticut until it is time for these regulations to be relaxed.

—Presented at the Defense Lighting Conference of the American Institute of Electrical Engineers, New York, January 26, 1943.

NUMBER OF ACCIDENTS FOR BRIDGEPORT AND NEW HAVEN, JUNE 1, 1941, TO DECEMBER 1, 1941, COMPARED WITH JUNE 1, 1942 TO DECEMBER, 1942

TABLE I

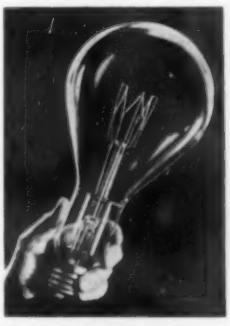
NUMBER OF ACCIDENTS PER MILLION VEHICLE MILES

Year	Thoroughfares with Modern Lighting		Thoroughfares with Old Lighting		Rest of City		Entire City	
	Day	Night	Day	Night	Day	Night	Day	Night
1941	7.57	5.71	6.95	9.75	7.52	9.62	7.42	8.91
1942	6.66	6.64	5.32	12.90	6.55	11.90	6.32	10.80
Change	—.91	+.93	—1.63	+3.15	—.97	+2.28	—1.10	+1.89
Change %	—12.2	+16.2	—23.5	+32.3	—12.9	+23.7	—14.8	+21.1

TABLE II

TOTAL NUMBER OF ACCIDENTS

1941	341	80	278	161	970	356	1589	597
1942	210	93	149	148	590	309	949	550
Change	—131	+13	—129	—13	—380	—47	—640	—47
Change %	—38.5	+16.2	—46.4	—8	—39.1	—13.2	—40.2	—7.9



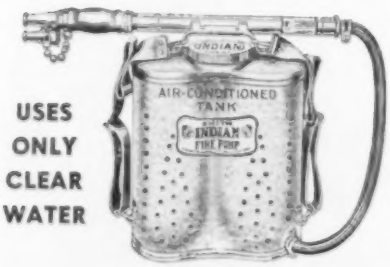
A new 200-watt lamp guaranteed not to crack under outdoor weather conditions in an open fixture. It is made in sizes 200 to 2,000 watts by Radiant Lamp Corp., Newark, N. J.

Oh, no you don't, Adolf..

INDIAN FIRE PUMPS

STOP FIRES FAST, *BEFORE THEY SPREAD*

With 5-gallon tank slung on his back, operator can move about quickly in fighting the fire. No need to stop and pick up the extinguisher. Arms are left free for climbing ladders, etc.



USES ONLY CLEAR WATER

To smash the fires which might be set by enemy agents the best weapons are **INDIAN FIRE PUMPS.** They use clear water only. No chemicals. Adjustable nozzle throws powerful 30 to 50-ft. pressure stream or spray as needed. Thousands are in use by fire departments, industry, Army and Navy, foresters. A plant fire brigade equipped with **INDIANS** is the best solution to the industrial fire problem. Be prepared. **INDIAN FIRE PUMPS** are strongly built of best materials—give years of service. Equip now!

SEND FOR CATALOG

D. B. SMITH & CO., 421 MAIN ST., UTICA, N. Y.

***Pacific Coast Branch:* Hercules Equipment & Rubber Co., 435 Brannan St., San Francisco, Cal.**

More Light Needed and Coming on Dimouts

CURTAILED lighting, for any reason whatever, is the most difficult subject for street-lighting men to handle or discuss. It is contrary to their training. It is as if musicians were restricted to playing muted instruments.

At a recent gathering of the country's noted street and highway lighting specialists, "dimout" was the topic. The lack of basic information was obvious. Shortly after the declarations of war it was alleged that "skyglow" was facilitating the torpedoing of American ships. With necessary haste military regulations were drawn up by military men curtailing shore lighting. Street lights, automobile headlights, store-window lighting, advertising signs, and apartment, hotel, and office lighting have all been masked.

What to do has been set forth. Now the results in increased night traffic accidents and fatalities are known. In the New York City area, for instance, lighter traffic and slower speeds have reduced day fatalities by 28.3 per cent; but night fatalities have risen 12.7 per cent. Had night fatalities declined in accord with the daytime decrease, 201 fewer persons would have been killed at night. This experience is typical in kind throughout the dimmed out areas. It is causing general concern among municipal officials.

An engineer asked that a balance be struck between the losses at sea occasioned by adequate street lighting and the losses on shore due to curtailed street lighting. The representative of a utility conceded that cargoes might be lost by skyglow guiding the enemy submarine, but that on shore more lives were being lost in dimout traffic. Many of these lives belonged to war workers. Was a cargo more valuable on the sea or in the shop? Many thought that the cargo is most valuable when it reaches our expeditionary forces, in whose hands it could save many more lives than those lost through aiding the safe passage of the ship by reducing skyglow to minimum.

Do Street Lights Intensify Skyglow?

Another engineer asked whether or not the part which street lighting plays in skyglow had been determined. It seems that such studies are under way now at Fort Belvoir. There we have it. This is the information which city officials must have in order to act wisely.

If street lights, several miles from the water front and invisible at sea, do not contribute measurably or noticeably to skyglow, then they should be lamped normally and without masking. Where they do add to skyglow, their contribution should be eliminated along with the rest of the artificial skyglow. For there is a natural glow caused by stars and moon which is ineradicable. This is the ultimate hazard which American ships must face.

A civilian defense official asserted that the complicated problem of dimout cannot be solved by engineers, because of its political, social, and military aspects. City officials, however patriotic or incapable of personally determining correct local procedure under the military regulations, are responsible to their townsfolk and citizens. Public disapproval, whether or not accurately based, can sweep out those officials who play ball with all but the public they represent. This is the social aspect. The military aspect is that "skyglow" endangers shipping and must be reduced—scientifically if possible, ruthlessly if necessary.

The facts appear to be that neither method has been employed. It is not known now whether or not street lights a few miles from the coast contribute perceptibly to skyglow at sea. Yet street lighting has been curtailed drastically. Night traffic accidents and fatalities have increased definitely. Many windows in tall buildings remain unshielded.

Solve Street Lights

The only serious controversy over dimout relates to the street lighting. All other lights are for convenience and show. Street lights from the eras of oil and gas, are to embarass criminals and assist drivers. Stringent curtailment of street lighting gives business to the thug and defective vision to all drivers.

It may be that the engineer is the only man who can solve this dimout problem, by determining and presenting the facts on which military men can construct regulations of unquestionable necessity, and that public officials can sell this necessity to the people. There is drama in truth, confusion in measures based on opinion, possibility, emotion, and insufficient hard study. If or where street lighting is a menace to ships, its menace must be scientifically removed. If the aura of street lighting is negligible, then street lighting should be commanded to go on keeping drivers and pedestrians apart. There are engineers capable of determining the facts without bias. The facts would stop this otherwise wasteful and footless controversy.

Floodlights for Street and Sewer Repair

A NEW line of inexpensive, lightweight weather-tight, porcelain-enamel floodlights for general and protective lighting is announced by the Westinghouse Lighting Division, Cleveland, Ohio. The units are available in four sizes: for 75 to 100-watt lamps, 150 to 200, 300 to 500, and 750 to 1,000-watt lamps. The one-piece reflector housing is made from heavy gage sheet iron with porcelain-enamel finish. The white porcelain enamel inside housing is separately fired for durability. The smaller sizes are particularly recommended for street and sewer repair work. The larger units were designed for protective floodlighting of plants.

Modern type of utility floodlight

Private Hearn made a turn in a dim-out.
When they lifted the jeep to pull him-out,
With a look rather sheepish,
Or should I say jeepish,
He confessed he had not put his lim-out.
—Los Angeles Police Department.

BULLETS WON'T STOP 'EM—

BUT HTH WILL!

AMONG the deadliest enemies of U. S. troops are *water-borne diseases*. Invisible killers — whose "combat divisions" run into the billions! They spread typhoid, dysentery and other epidemics that can cripple or wipe out an entire army. But thanks to the skill and industry of the Medical Intelligence Division of the United States Army, our troops can take the field well prepared to combat these unseen assassins.

Potent weapon in the battle against bacteria is Mathieson HTH and other dry chlorine carriers. These quick-acting bactericides are the active sanitation principle employed by the Army's portable water purification units. When added to water, they release germ-killing chlorine — making the water safe to drink!

HTH is also used to purify drinking water at training centers and other military establishments. Additional quantities of HTH are required to flush water mains before they are put into use . . . and to render the disposal of sewage safe and sanitary.

U. S. Army portable water purification unit in action on the bank of a stream. In the circle, at the left of the chlorinator, a 5-lb. can of Mathieson HTH "in service"! (Photo #130812, U. S. Army Signal Corps).

As a result of its importance in safeguarding the health of our armed forces, the distribution of calcium hypochlorite is now rigidly controlled by the W. P. B. That means Mathieson must give our armed services first call on available supplies. But it also means that the U. S. isn't taking any chances with disease germs — the greatest leveller of armies the world has ever known!

THE Mathieson Alkali Works (INC)

60 E. 42ND ST., NEW YORK, N. Y.

LIQUID CHLORINE . . . HTH . . . SODA ASH . . . CAUSTIC SODA . . . BLEACHING POWDER . . . AMMONIA, ANHYDROUS and AQUA . . . BICARBONATE OF SODA . . . PH-PLUS (FUSED ALKALI) . . . DRY ICE . . . CARBONIC GAS . . . SYNTHETIC SALT CAKE . . . SODIUM CHLORITE PRODUCTS

Preparing for Post-War Competition Among Cities

THAT the effect of post-war industrial migration will be not the establishment of new cities but the strengthening of some metropolitan districts at the expense of others is the prediction of Homer Hoyt of the Chicago Plan Commission. Discussing "The Structure of American Cities in the Post-War Era," in *The American Journal of Sociology* for January 1943, Dr. Hoyt points out that:

"At the close of the war nine to thirteen million men in the armed forces and twenty million workers in war factories will form a great mobile population that will be ready to move to any city promising jobs. A great number of industries will, of course, remain tied to old locations and will resume their pre-war types of manufactures. However, many new well-located war factories suitable for conversion into peacetime production will draw industries away from obsolete plants. A vast reshuffling of plant locations will in turn cause great shifts in the sites to be selected for new housing. Since three-fourths of the new war plants are located within the metropolitan areas of cities with a population of over 100,000, the effect of post-war industrial migration will not be the establishment of new cities but the strengthening of some metropolitan districts at the expense of others. . . .

"If over twenty-nine million war workers, soldiers, and sailors are to be thrown suddenly into the labor pool, and if private industry is unable to absorb them quickly, our whole economic system will go into a downward spiral which will suspend all urban growth everywhere. It must be assumed, however, that a problem of this imperative nature will, if necessary, be met by the federal government—first, by gradual demobilization and, second, by providing a public works program that will at least bridge over the period of transition if it does not permanently expand the scope of state enterprise. . . .

Planning the Future City

"In the post-war American city the main downtown area may be greatly expanded to provide for a belt of parking lots and green recreation areas immediately encircling the principal office buildings and department stores. The blighted areas that form sectors of deteriorated housing along railway lines and old industrial sections should be replaced by new model group houses and apartments for all groups of downtown office workers who desire to live close to their employment, regardless of their income. The encircling belt of middle-aged housing just beyond the present central industrial and blighted area will still remain in the first post-war generation, but its oldest structures should be removed, leaving more light and air for the buildings that remain. Likewise, old industrial sections extending in radial lines along railroads and rivers to the periphery will probably continue to be used except for land close to the center, which will be better adapted for other purposes.

"The importance of river frontage has greatly waned, as compared with the industrial advantages of large plottage accessible to railroads. The main new industrial belt thus will probably be located on the outer rim of the present city along major water-courses and railroad belt lines. There should be a green belt separating the factories from a zone of garden homes for workers living in the rural-urban fringe.

"The new high-grade residential suburbs will probably be much farther from the center of the metropolis than the present adjoining suburban towns, since executives commuting by airplane can live in model neighborhoods located on lakes, rivers, or hills several hundred miles from their offices. The new metropolitan district of the airplane age will thus include within its sphere of influence not only open green spaces surrounding its tallest buildings, but it will embrace within its outer orbit tens of thousands of square miles of open country. There should then result a synthesis of urban and rural life, providing the natural beauty of the country for the city dweller and the advantages of libraries, lectures, and stores for the rural resident.

"The vastly extended scope of the post-war metropolitan district will increase the demand for a metropolitan government that will be coextensive with the functions of the enlarged urban community."

Deferment Rulings on Municipal Employees

MUNICIPAL employees working on utility services, such as electric power, water supply, gas, and steam heating, are affected by the ruling of the Selective Service System issued January 20. This ruling, identified as Occupational Bulletin No. 9, certifies that heating, power, water supply, and illuminating services are activities essential to the support of the war.

It furthermore sets forth a list of occupations in these fields which require a reasonable degree of training and that are necessary in order that the activities may be efficiently maintained. It advises that draft boards should consider the individual's training involved in his occupation, his qualifications or skill, and the availability of persons with his qualifications or skill who can be trained to replace him.

Deferment is largely the responsibility of the employer. Ordinarily, draft boards will not consider this action unless supported by an affidavit, usually DSS Form 42A filed by the employer covering the employee's occupational necessity. This may be filed regardless of the wishes of the individual. If the local board denies the request, by use of a form 59 advising the registrant's classification, the employer can appeal the case within a 10-day period by merely signing the form and returning it to the local board.

If the appeal is denied, the employer may then bring the matter to the attention of the State Director at the State Selective Service Headquarters with the request that the case be reopened.

The following is a list of the critical occupations in the heating, power, water supply, and illuminating services that are listed in Bulletin No. 9:

Accountant, Audit (Except those performing routine auditing duties under general supervision)
Armature Winder
Auxiliary Equipment Operator (Except oilers and wipers)
Bacteriologist
Batteryman, Large Emergency Storage
Blacksmith, Maintenance
Boiler Operator
Boilermaker, Maintenance
Booster-Pump Operator
Bricklayer, Maintenance Refractory
By-Product Operator, Gas
Cable Splicer (for overhead or underground cable)
Carpenter, Maintenance
Chemist
Chief Operator, Water Purification or Softening
Crane Operator
District Serviceman (Electric Power)
Draftsman, Engineering
Driller, Water Well
Electrical Tester
Electrician, System or Plant
Engineer, Professional & Technical (Actually engaged in engineering and research)
Engineer, Turbine or Diesel
Foreman (Except laboring gang Foreman)
Gas Equipment and Control Man
Gas Maker
Heavy Mobile Equipment Operator (Maintenance and Construction) (Except truck or tractor drivers)
Inspector (Necessary for the continuing of uninterrupted services specified)
Instructor in Established Training Program
Lead Burner
Lineman
Load Dispatcher, Power or Gas
Machinist, Maintenance
Manager, Employment and Personnel
Mechanic, Maintenance
Meter Repairman, Gas and Water
Patrolman, Transmission Line
Pipe Fitter, Maintenance
Purification Operator, Gas
Pusher Man
Radio Technician
Rigger, Construction
Rigger Supervisory, Underground Cable
Sheet-Metal Worker, Maintenance
Storekeeper, Chief (Except stock clerks, bin clerks, or stockholders, etc.)
Substation Operator
Superintendent or Manager, Division, District, Plant and Department (Except managers or their assistants concerned primarily with sales, promotional, legal, tax, clerical, insurance, rate structure, and other aspects of nontechnical or nonoperating activity)
Switchboard Operator, Power
System Operator (Load Dispatcher)
Tree Trimming Supervisor (Overhead Power Lines)
Welder (All Around)

CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Koehring Mud-Jack raises sunken concrete . . . walks, curb and gutter, driveways, streets, highways, etc., eliminating reconstruction costs. Write for the new Mud-Jack Bulletin illustrating applications and describing the Mud-Jack Method.

KOEHRING COMPANY
MILWAUKEE • WISCONSIN

MUD-JACK METHOD

SORRY, NO WEED-KILLER

Raw chemicals for Dolge Weed-Killer are unobtainable, because Uncle Sam needs them for the all-important job of smashing the axis. However, we can still furnish most of the other Dolge chemicals for maintenance: disinfectants, fungicides, deodorants, insecticides, cleaners, floor finishes, etc. Please write.

The C. B. DOLGE Company
Westport Conn.

SANITARY ENGINEERS

Send for Facts on Our "NON-CLOG"

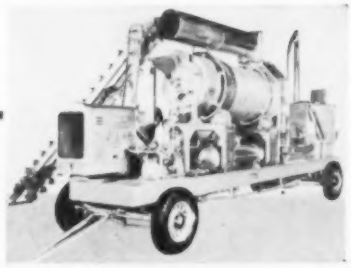
SEWAGE SHREDDERS

Gruendler Shredders Selected by U. S. Navy

The Ideal Unit for Municipal Sewerage Plants

"Established in 1885"

For the disintegration of Rag, Stock, Garbage, Floatables, and Fibrous Materials *without Choke Down* so as to pass Screen Bar—



PORTABLE ASPHALT PLANTS

Write for Catalog

Elkhart White Mfg. Co. Indiana

ANTHRAFILT

A Filter Medium For All Purposes

ANTHRACITE EQUIPMENT CORP.
19 Rector St. New York

H. G. Turner Research Engineer
STATE COLLEGE, PA.

WANTED: TRAINED ADMINISTRATORS

☆ Cities all over the country are losing some of their top administrators to the federal and state governments and to defense industries. Unless there are trained replacements for these key men, city governments will be seriously crippled. If you are a department head, you owe it to your city to train an "understudy" for your job. If you are a junior administrator, now is the time to prepare for advancement.

Enroll now in one of these nine practical correspondence courses:

- Technique of Municipal Administration
- Municipal Finance Administration
- Municipal Police Administration
- Municipal Recreation Administration
- Local Welfare Administration
- Municipal Personnel Administration
- Municipal Public Works Administration
- Municipal Fire Administration
- Local Planning Administration

☆ Special texts have been prepared for administrators on the job. Lesson papers are reviewed by leading authorities in each field. The $35 fee for each course covers the text, individualized lesson instruction, and a certificate upon satisfactory completion of the work. The text alone sells for $7.50 a copy—$60 for a complete set. For use in group training projects, in lots of five or more, the price is $6 a copy.

There are now nearly 800 public officials enrolled in these courses in nearly 300 cities in 44 states.

WRITE FOR A SPECIAL CIRCULAR TODAY

THE INTERNATIONAL CITY MANAGERS' ASSOCIATION
1313 EAST 60TH STREET CHICAGO

Depreciation of Buildings for Assessment Purposes

IN his study of problems of computing depreciation of buildings for property tax assessment purposes, published last month by the National Association of Assessing Officers,* Ronald B. Welch presents the following principal conclusions:

1. Physical depreciation and obsolescence should be separately estimated if the reproduction cost less depreciation method of appraisal is used. On the other hand, if the income of sales method of appraisal is used, no purpose is served by endeavoring to isolate the two types of depreciation.

2. If scheduled depreciation (as distinguished from observed depreciation) is to be used, different schedules should be applied to buildings with different structural characteristics, different uses, and different conditions of maintenance.

3. Studies of service lives and scrap values of structures should be conducted in the assessors' offices of our larger cities and counties for such light as they may throw upon rates of depreciation and residual values.

4. The policy of maintaining substantial residual assessed valuations as long as a structure is in use appears to be inconsistent with property tax law if not with property tax theory. Nominal assessed valuations should be retained on fully depreciated structures as proof that they have not been overlooked, but the retention of substantial valuations where no actual values exist is a policy which should be avoided until sanctioned by law.

5. A policy of deducting depreciation on the basis of actual observation once in six years and on the basis of scheduled depreciation rates every second or third intermediate year is recommended where the laws permit such a policy. Where the law precludes depreciation allowances more frequently than once in four years, its amendment is recommended. Pending such amendment, allowance of observed depreciation every eighth year and scheduled depreciation in the intermediate revaluation years should produce reasonably satisfactory results.

6. The policy of suspending depreciation in periods of rising prices is productive of certain inequalities and should be avoided if appropriations for the assessment function permit.

7. The assumption that obsolescence, "normal" or otherwise, accrues at a certain rate per annum appears to be unwarranted.

8. If district obsolescence allowances are used, districts should be laid out, as far as possible, along well-defined economic boundaries, and "breaks" in values at ill-defined boundaries should be held to a minimum.

9. The income and sales methods of appraisal should be freely resorted to in the assessment of obsolescent buildings, for it is here that the reproduction cost less depreciation method is most vulnerable.

* See page 93 of this issue.

To Truly Win the War

This nation must strive to emerge from this war a stronger and more efficient democracy. Unless we do that, we cannot truly "win" the war. Unless we ready ourselves to deal in an effective and democratic fashion with the immensely complicated political, economic, and social problems of the postwar United States and the postwar world, we are likely to be plunged into socal chaos or to succumb to some new dictatorship. If democracy should fail to operate successfully after the victory, the war would be without meaning and its sacrifices without fruit.

—Concluding paragraph of the 1943 pamphlet of the Educational Policies Commission on "What the Schools Should Teach in Wartime." (See page 93 of this issue.)

City Manager Appointments

Brewer A. Billie, an engineer, has been appointed city manager of Astoria, Ore., to succeed *George T. McClean.*

R. M. McCool has been appointed city manager of Norman, Okla., to succeed *Floyd Eoff* who is now a lieutenant in the U. S. Army, stationed at Mt. Rainier Ordnance Base, Tacoma, Wash.

Loy Nichols succeeded *L. L. Kincaid* as city manager of Burkburnett, Texas.

Harold H. Corson, city treasurer and engineer, will act as manager of Birmingham, Mich., while *Donald Egbert* serves as lieutenant in the Naval Air Force.

A. L. Kroeger is acting manager of Durango, Colo., during *Major O. W. Harrah's* leave for military service.

J. Ernest Courtemanche has been appointed city manager of Montreal-East, Quebec, to succeed his brother *Napoleon Courtemanche* who has been acting manager during the past two years.

Lamar Harmon has succeeded *Ray Wilson* as city manager of St. Augustine, Fla.

W. C. de Cordova, city secretary, will act as city manager of Pampa, Texas, while *Steve Matthews* is on leave as lieutenant in the Navy.

George Dietrich succeeded *F. Robert Buechner* as city manager of Superior, Wis.

R. B. Meserve, city manager of Fernandina, Fla., since 1941, became first city manager of Marianna, Fla., on February 15.

Lea Rowland, city engineer, has been named acting manager of Roswell, N. Mex., succeeding *Clyde D. Fulton,* deceased.

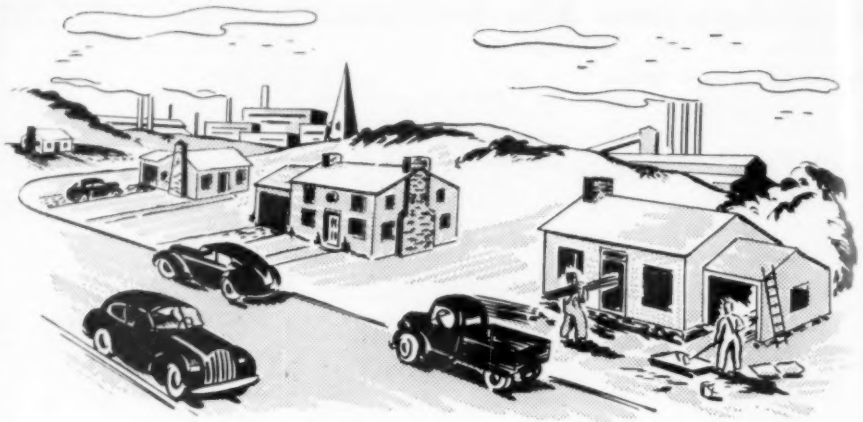
CLARENCE E. RIDLEY,
Executive Director, International City Managers' Association.

Municipal Bond Market

The year-end prices and yields of approximately 200 state and municipal bonds are tabulated in a pamphlet issued by the Chemical Band & Trust Co. of New York. By selecting from each year-end price tabulation all bonds having maturities of 10 to 25 years, this study has developed a price index which depicts the market performance of a theoretical bond having an average life of about 16 years. As of the end of each year, 1933 to 1942, this index advanced steadily from 90⅞ to 130⅛ at the close of 1940, and at the end of 1942 stood at 127½. In terms of yield, the index moved from 5.30% to 1.85% and then to 2.10%.

The following are some recent sales of new issues as reported in February issues of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$600,000	Erie Co., N. Y., Home Relief	.90	1-3 Ser.	.86
450,000	Boston, Mass., General Obligation	3.5	2-33	.93
129,000	Louisville, Ky., Sewer	4	6	.95
600,000	St. Louis, Mo., Airport	1.16	8.85 Avg.	1.047
150,000	Washington Co., N. Y., Bridge of 1943	1.20	1-15 Ser.	1.16
187,000	Portland, Ore., Public Works	5	6.25 Avg.	1.285
1,100,000	Syracuse, N. Y., General Refunding, 1943	1.30	5-14	1.291
100,000	Louisiana, Series G. Pension	2.5	8.25	1.53
230,000	Jacksonville, Fla., Refunding of 1943	1.75	16	1.728
2,738,000	Kansas City, Mo., Water Revenue	1.75	13 Avg.	1.73
102,000	Fort Worth, Tex., Marine Creek Channel, Drainage and Overflow Imp.	2	8.5 Avg.	1.8233
125,000	Boston, Mass., Traffic Tunnel	4	7.5-57.5 Opt.	1.936
104,000	Gary, Ind., Sanitary Dist.	3.25	16-17 Ser.	2.05
110,000	Greenburgh, N. Y., Refunding of 1943	2.5	10-20 Ser.	2.437
7,000,000	Seattle, Wash., Municipal Light and Power	2.5	5-20.5 O.-A.	2.6617
402,000	Warren Tp., Mich., Water Supply System Revenue	3	10.66 Avg.	3



You can do something about tomorrow-

Today

RIGHT NOW, VICTORY COMES FIRST. America is in the middle of the biggest job it ever tackled—the job of winning a war. And it's full time work.

But, remember, there's a tomorrow coming—a tomorrow of peacetime rebuilding for a world that has long been denied many things that are essential to normal living. There's hardly a community that will not be affected. New homes—new industries—new demands on municipal service. Equipment for water conditioning and sewage treatment, though perhaps adequate for today, may be severely taxed by the needs of tomorrow. And the time to plan for these demands is today.

In anticipating your needs for replacement of equipment or expansion of your facilities, consult Graver. Hundreds of installations in municipalities all over the country attest to the exceptional efficiency and economy of Graver equipment. Our engineers will gladly advise with you on any specific problem of water conditioning or sewage treatment, and they're backed by years of experience in this highly specialized work.

Write Graver—today. There's no obligation.

WATER SOFTENERS
•
FILTRATION SYSTEMS
•
CLARIFIERS
•
SEWAGE EQUIPMENT
•
STEEL STORAGE TANKS
•
VAPOR CONSERVATION SYSTEMS
•
WELDED CONSTRUCTION
•
STRESS RELIEVING
•
X-RAYING
•
FABRICATED STEEL AND CORROSION-RESISTING PLATE

GRAVER

GRAVER TANK & MFG. CO., INC.

NEW YORK
CATASAUQUA, PA.

4809-35 TOD AVE.
EAST CHICAGO, IND.
CABLE ADDRESS — GRATANK

CHICAGO
TULSA

43-12-W

Municipal Law Notes and Decisions

Prepared by National Institute of Municipal Law Officers, Washington, D. C.
Charles S. Rhyne, Executive Director

Amusement Devices—Ordinance Licensing

Seller of mechanical music boxes to outlet establishments does not have sufficient interest to maintain an action to enjoin in the enforcement of an ordinance requiring the proprietors of public establishments to pay license fees for such music boxes even though the seller had voluntarily assumed the payment of the fee on behalf of such establishments using its music boxes. *Shyvers* v. *City of Bremerton*, 131 Pac. (2d) 18 (Wash. Nov. 25, 1942).

Barbershops—Fixing Hours of

An ordinance prohibiting operation of barbershops before 8 a.m. on any day and after 6 p.m. on Monday, Tuesday, Wednesday, and Friday, 12 noon on Thursday, and 8 p.m. on Saturdays, and certain days before named holidays, is a valid exercise of the city's police power. *City of Cincinnati* v. *Gorrell*, 45 N. E. (2d) 152 (Ohio App. Hamilton Co. May 18, 1942. Just released for publication).

Bonds—Past Due Interest

Past due interest on an outstanding bond issue could be included by a city in a refunding issue. *State* v. *City of Brooksville*, 10 So. (2d) 342 (Fla. Oct. 20, 1942).

Bus—City Operated—Fall When Alighting From

A city bus passenger who fell and was injured when alighting from the bus by stepping into a hole covered with grass was not guilty of contributory negligence, and a judgment for defendant city is reversed as the question of contributory negligence should not have been submitted to the jury. *Jackson* v. *City of Seattle*, 131 Pac. (2d) 172 (Wash. Nov. 25, 1942).

Civil Service—Removal for Accepting Gratuities

A city plumbing inspector in the City of New York was properly removed for accepting gratuities from persons in the plumbing business and a trial need not be given to such Civil Service employee before removal unless he is a veteran or a volunteer fireman under applicable statutes. *Plunkett* v. *Wilson*, 37 N. Y. Supp. (2d) 959 (N. Y. Sup. Ct. N. Y. Co. Nov. 12, 1942).

Conference of City Officials—City Payment of Officials' Expenses

Payment by a city of the expenses of city officers in attending the Annual Conference of the League of California Cities was an expenditure of municipal funds for a "public purpose." *City of Roseville* v. *Tulley*, 131 Pac. (2d) 395 (Cal. App. Nov. 19, 1942. App. Den. by Cal. Sup. Ct. Jan. 15, 1943).

Insurance—City Tax on Premium Receipts

An ordinance levying a tax on the gross receipts of premiums from insurance policies written and delivered within the city is valid and does not infringe the Federal Constitution. *Fidelity & Casualty Co. of New York* v. *City of Columbus*, 22 S. E. (2d) 727 (Ga. Oct. 13, 1942).

Negroes—Use of Golf Course Reserved for White Race

A city of Baltimore park board can exclude Negro players from municipal golf courses reserved for members of the white race so long as the Negroes are not relegated to a golf course which is substantially inferior for segregation is the public policy of Maryland and does not violate the Federal Constitution. *Durkee* v. *Murphy*, 29 Atl. (2d) 253 (Md. Dec. 8, 1942).

Officers—Policeman in National Guards Not Entitled to Salary

Policeman who had joined National Guard with knowledge that his company would soon be called for active duty could not collect difference between his policeman's salary and his military pay as under the Military Law such compensation is payable only to those called to duty without voluntary enlistment and plaintiff policeman here had in effect volunteered. *Stevens* v. *Village of Endicott*, 45 N. E. (2d) 166 (N. Y. Ct. App. Oct. 29, 1942).

Pensions—Back Payments Into Fund by Employee—Interest

A city employee who was at first refused and then granted admission to the Pension Fund was liable for back payments, but not for interest thereon. *Raymond* v. *Municipal Employees Pension Commission of Newark*, 28 Atl. (2d) 659 (N. J. Sup. Ct. Nov. 18, 1942).

Pensions—Employee Not Required to Contribute to Fund

A city employee could recover the amount deducted from her pay for the pension fund as she was not forced to receive the benefits of such fund. *Confroy* v. *Municipal Employees Pension Fund of City of Newark*, 28 Atl. (2d) 600 (N. J. Sup. Ct. Oct. 30, 1942).

Policemen—Illegal Demotion

Where a policeman was illegally demoted from inspector to patrolman, a writ of mandamus is issued commanding the rescinding the order of demotion. *Nelson* v. *Lindsey*, 10 So. (d) 131 (Fla. Oct. 23, 1942. Reh. Den. Nov. 13, 1942).

Public Utilities—City Ownership of Revenue-Producing Waterworks

A city ordinance providing for the issuance of certificates in connection with enlargement of a waterworks system was valid under a statute which allows cities to construct revenue producing undertakings. *Lawson* v. *City of Moultrie*, 22 S. E. (2d) 592 (Ga. Oct. 13, 1942).

Sewers—Refund of Taxes Paid in Error

Recovery of taxes paid is allowed where landowner had a contract with the city whereby the city granted an easement for sewer construction to the city in consideration of the abatement of all sewer assessments against his land, as the abatement related to all land owned in the city—not just the land through which the sewer was constructed. *Kirchner et al.* v. *City of Pittsfield*, 44 N. E. (2d) 634 (Mass. Oct. 29, 1942).

Sidewalks—Repair of After Accident No Proof of City's Negligence

Where pedestrian fell on defective sidewalk, the fact that repairs were made after the accident did not prove city's negligence and admission of such evidence was reversible error. *Shoemaker* v. *City of Barberton*, 44 N. E. (2d) 477 (Ohio App. April 30, 1940. Just released for publication).

Special Assessments—Torrens Act—Estoppel

Lessor under 99-year lease, renewable forever, of property registered under the Torrens Act and holder of the reversionary estate were both estopped to plead failure to comply with statutory requirement that notice of ordinance for improvements had not been filed where the lessee had petitioned for the improvements and had promised to pay the assessments. *Vinewood Realty Co.* v. *Village of Willowick*, 45 N. E. (2d) 148 (Ohio App. Dec. 18, 1941. Just released for publication).

Streets—Automobile Accident Caused by Defect—Credibility of Testimony

Use of improperly authenticated transcript of testimony before liquor Control Board to attack credibility of plaintiff in a personal injury action is reversible error. Plaintiff was injured when the automobile in which he was riding allegedly struck a large rut in a city street and swerved into an iron post on the sidewalk. *Ingram* v. *City of Pittsburgh*, 29 Atl. (2d) 32 (Pa. Nov. 23, 1942).

Tax Liens—Foreclosure for Ad Valorem Taxes and Special Assessments

In foreclosure of a lien for delinquent special assessment taxes, where the County Treasurer later sold the property at a tax resale for ad valorem taxes only, the proceeds of the sale were properly divided between bondholder and the county, but if the sale does not bring enough to satisfy both liens, the costs should be paid from the special assessment lien under which the bondholder claims. *Board of County Commissioners of Seminole County* v. *City of Wewoka ex rel. Morton*, 129 Pac. (2d) 83 (Okla. Sept. 15, 1942).

Federal Informer Statute—Recovery of Damages Sustained by the United States as a Result of Collusive Bidding on PWA Finance Work—Suit by Private Person

On January 18, 1943, the Supreme Court of the United States held that the Federal Informer statute must be construed as allowing a private person to recover half the amount returned to the Government in a suit based upon collusive and fraudulent bidding by contractors on PWA projects. The informer had sued electrical contractors who had submitted collusive and fraudulent bids on PWA projects entered into with local municipalities and school districts in the Pittsburgh area. The suit had been filed under the Federal Informer Statute which authorizes any person to recover from the person defrauding the Federal Government twice the amount of damages so sustained and a penalty of $2,000 for each collusive bid.

Previous to institution of the above suit the Government had indicted the contractors for fraud and they were fined $54,000, yet the present suit and recovery of $315,000 was also upheld.

Assistant Corporation Counsel *Nelson Rosenbaum* of New York City has very aptly pointed out "This decision gives to the public a formidable weapon whereby public contracts carried on by Federal grants can be kept free of fraudulent and corrupt practices. This is important in view of the fact that in the post-war era many large public improvements of municipalities will probably be partly financed by Federal grants." *Marcus* v. *Hess*.

Always . . . GOOD SERVICE to BEAN Owners Everywhere

While the manufacture of wartime equipment means fewer new sprayers this year, we are doing everything possible to help you keep your old BEAN rolling. Authorized BEAN dealers everywhere are ready with parts, repairs, and BEAN experience to give you prompt service when it's needed. Now, more than ever, you will appreciate the simple, rugged, get-at-able BEAN design, the ease with which it is maintained, and the long, hard service it delivers with little attention except to start and stop the engine.

JOHN BEAN MFG. CO.

Division of Food Machinery Corporation

9 HOSMER STREET • LANSING, MICHIGAN

105 WEST JULIAN STREET • SAN JOSE, CALIFORNIA

BEAN SPRAYERS ...Better ALL Ways

TRADE MARK GAMEWELL REG. U. S. PAT. OFF.

★ ★ ★ *Specialists in Public Safety* ★ ★ ★

MANUFACTURERS OF EMERGENCY SIGNALING SYSTEMS

★ FIRE ALARM ★ AIR RAID WARNING ★ AUTOMATIC FIRE DETECTION

★ POLICE SIGNALING ★ INDUSTRIAL FIRE ALARM ★ FIRE AND WATCHMEN'S SUPERVISORY

•

Two thousand municipalities, several thousand industrial plants and many of the largest institutions now use Gamewell Systems for the protection of life and property and to ensure the permanency of established business.

We freely cooperate in planning protective Signaling Systems.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS MASSACHUSETTS

Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Housing—Connection with Sewers

ARKANSAS.—*Bennett* v. *City of Hope*, Supreme Court, April 27, 1942, reported in 161 S. W. (2d) 186.

The City of Hope has an ordinance providing that no building shall be constructed, used, or occupied without being connected with the sanitary sewer system of the city.

The state statutes provide that nothing in the relevant statutes should be so construed as to authorize the Board of Health to order or compel the property owner to build a sewer for a greater distance from his property through or into any street or alley than 300 feet, to a place where a connection can be made with a sewer.

Bennett alleges that he has partially completed a residence on a lot that is more than 300 feet to a place where a connection can be made with a sewer, and questions the validity of the city ordinance forbidding him to construct his building without a sewer connection.

The court finds the ordinance invalid. It is generally known that in many, if not all, municipalities of this state there are outlying lots suitable for residence more than 300 feet from any sewer connections, and it seems clear that the state legislature had such property in mind and had no intention of preventing the erection of residences on such lots.

Certainly it cannot be said that the Bennett residence will necessarily be a nuisance if, as Bennett alleges, it is equipped with toilet facilities of the outdoor type approved by the State Department of Health and built according to WPA specifications, as Bennett states he intends to do.

EDITOR'S NOTE: Alfred Bettman, in his *Planning Notes*, published in the News Letter of the American Society of Planning Officials, says, with relation to this case, that a similar problem arises "in subdivision regulation. Subdivision plats are often submitted to planning commissions, where the land is too remote from existing public sewage facilities to justify compulsory connection. Certainly, some degree of power to prohibit small-lot subdivision in any such areas must or should exist; but of course carefully drawn subdivision regulations are in quite a different class from the very simple formula of the city of Hope."

Board of Zoning Appeals —Roof Sign

NEW YORK.—*Alexander Department Stores, Inc.* v. *Murdock*, Supreme Court, September 17, 1942, reported in 37 N.Y.S. (2d) 319.

Level is the owner and Alexander is the lessee of a building, located in a business center, in part two stories and in part four stories in height. On the roof of the part of the building which is two stories in height there was a sign advertising the business of the store conducted in it. The sign had been there since 1933.

In 1941 the petitioners applied to the Board of Standards and Appeals for permission to erect two additional stories on the two-story structure, and also to relocate the sign above the new roof in the same relative position. Under the law the sign could have remained on the old building indefinitely, but permission had to be obtained for its relocation after the proper alterations.

The Board allowed the alteration in height, but refused permission to relocate the sign, without prejudice to the proper filing of a proper application for a zoning variance.

The petitioner altered the store; but the application to relocate the sign, when made later, was denied.

The court finds that it was unreasonable to insist that a taxpayer who asks for a twofold permit, as in this case, must increase the height of his building in ignorance of his right to re-erect the sign. Possibly if he had known that he could not re-erect the sign, he would not have built. At the hearing on the building application the Board was familiar with all the facts that were presented with regard to the sign on the later date; and could have, and should have, acted on the whole matter at one application. It is unjust to make taxpayers guess and gamble in this way.

The determination of the Board with regard to the sign is annulled and set aside. An order will issue permitting petitioners to relocate the sign on the roof, as requested.

Importance of the Vermont Billboard Decision

THE Vermont billboard decision (*Kelbro, Inc.* v. *Myrick, Sec. of State et al.*) decided January 5, 1943 is an important forward step in bringing billboards under the control of legislative policy, but is not to be thought of as a startling innovation. The view taken was advocated and adopted as simply the next step logically due to follow from earlier court decisions.

The whole value of the commercial billboard, advertising goods not sold or services not performed on the premises where it stands, is in its visibility from the public street or highway. This has often been stated, notably in the Philippine Islands case of *Churchill and Tait* v. *Rafferty* (32 P. I. 580, 609, decided in 1915) where the court said:

"Suppose that the owner of private property, who so vigorously objects to the restriction of this form of advertising, should require the advertiser to paste his posters upon the billboards so that they would face the interior of the property instead of the exterior. Billboard advertising would die a natural death if this were done, and its real dependency not upon the unrestricted use of private property but upon the unrestricted use of the public highways is at once apparent."

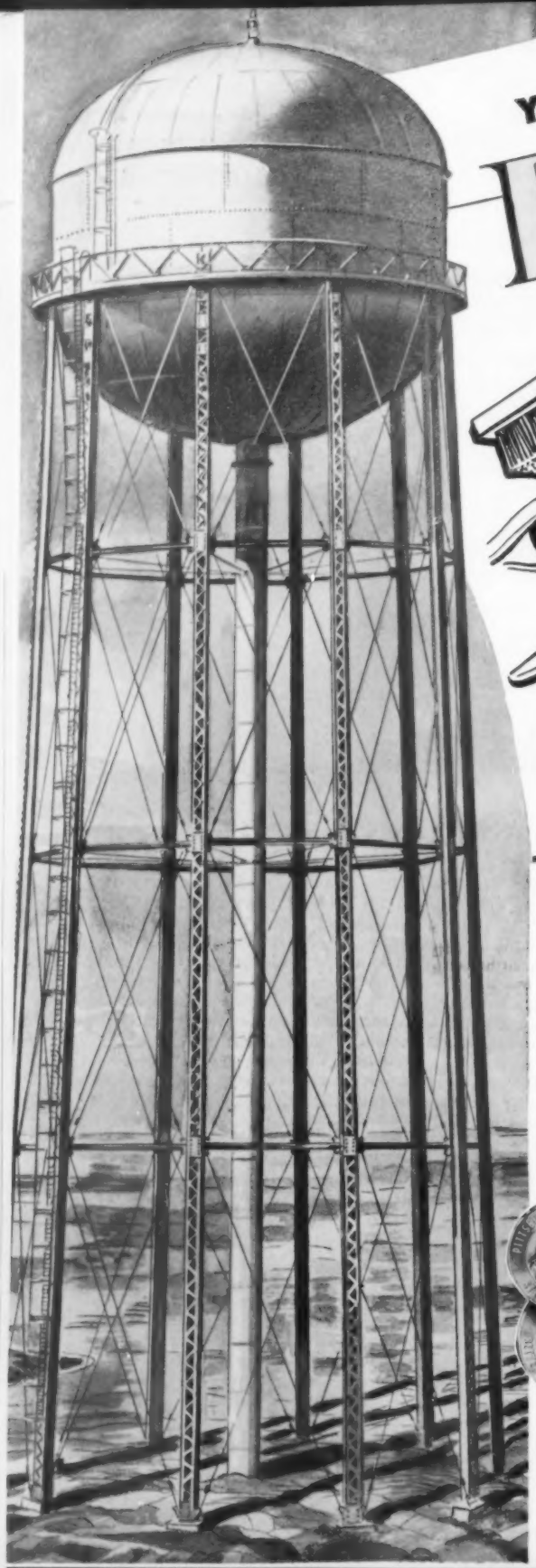
The right thus to use the privilege of visibility—not for the benefit of business conduct on the property but merely as a source of personal profit—is not possessed by the owner of land bordering on a public thoroughfare; consequently he cannot give it to another by renting out billboard sites. Legal doubts concerning this practice were expressed in the leading New York case of *Perlmutter* v. *Greene* by the query "whether the highway, created by public money, is controlled in part by those who desire to thrust upon the notice of the public the ostentatious display of private advertising from the adjoining premises for their own profit wherever they see fit" (259 N. Y. 327, 332, 182 N. E. 5, 6, decided in 1932). Still plainer was the warning conveyed by the declaration in the Massachusetts billboard decision of 1935 that the advertising companies "are not exercising a natural right" but "are seizing for private benefit an opportunity created for a quite different purpose by the expenditure of public money in the construction of public ways" (*General Outdoor Advertising Co.* v. *Department of Public Works*, 289 Mass. 149, 169, 193 N. E. 799, 808).

The Vermont Supreme Court has now definitely crystallized this view of the fundamental rights of roadside land practice and also, by applying the fundamental principle of the law of easements, has explained why business premises (in contrast to eruptions of billboards on vacant lots) are entitled to the visibility that an adjoining street or highway affords. It has thus decisively completed a line of thought that began over a quarter of a century ago. The conviction has long been growing in judicial minds, as well as elsewhere, that the billboard advertiser's "rights" would not stand analysis.

RUTH I. WILSON

New York, February 12, 1943.

EDITOR'S NOTE: The writer of this opinion is the author of an article in the Georgetown Law Journal for June, 1942, which the Vermont opinion cites.



YOUR ELEVATED STEEL TANK

Rx for the Duration

CLEAN
INSPECT
PAINT
REPAIR

A NECESSARY WARTIME PRESCRIPTION, ASSURING CONTINUED BEST SERVICE FROM YOUR

Elevated Steel Tanks

by-

PITTSBURGH
•DES MOINES

Check your tank's condition regularly—inside and out; have your local riggers and painters keep maintenance up to the mark—and your present tank will see you through!

For paint specifications and detailed recommendations, write—without obligation.

PITTSBURGH • DES MOINES STEEL CO.

PITTSBURGH, PA. 3412 NEVILLE ISLAND—DES MOINES, IOWA, 913 TUTTLE STREET

NEW YORK, ROOM 915, 270 BROADWAY · CHICAGO, 1216 FIRST NATIONAL BANK BUILDING

DALLAS, 1217 PRAETORIAN BUILDING · SAN FRANCISCO, 619 RIALTO BUILDING

SEATTLE, 1120 EIGHTH AVENUE, SOUTH

Municipal and Civic Publications

Please mention THE AMERICAN CITY when ordering

Wartime Legal Problems of Cities

Municipalities and the Law in Action.—Edited by Charles S. Rhyne, Executive Director, National Institute of Municipal Law Officers. 730 Jackson Place, Washington, D. C. 1943. 611 pp. $7.50.

Proceedings of the 1942 Conference of the National Institute of Municipal Law Officers, forming a record of the effects of the first year of war upon the cities of the United States. The wealth of information in this book has been collected for the single purpose of aiding city governments to meet problems created by the war. There are comprehensive reports on a wide range of such problems, including the effect of war on municipal employee problems, tort liability, zoning and planning, public housing, city revenues and financing, airports, public utilities, ordinances, civil liberties, federal-city relations, intermunicipal cooperation—to mention a few.

This volume gives the busy City Attorney a place he can turn to in his constant search for "precedents" to support his conclusions as to particular plans or programs of his city. Here he can check on what cities have done, are doing, and plan to do on almost any current municipal problems in which he or his city are interested.

Municipal Accounting

Fundamentals of Governmental Accounting.—By Lloyd Morey, Professor of Accountancy and Comptroller, University of Illinois, and Robert Phillip Hackett, Associate Professor of Accountancy and Assistant Dean of the College of Commerce and Business Administration, University of Illinois. John Wiley and Sons, Inc., New York. 1942. xii + 448 pp. $4.00 from THE AMERICAN CITY.

Presentation of the authoritative and acceptable body of underlying principles relating to public accounts and a broad outline of the application of these principles. It deals chiefly with principles rather than with details of form or procedure and, although the material in most respects applies to all governmental bodies, the book deals with situations found in cities rather than in other types of government. Its purpose is to present the essentials necessary for a fundamental picture of the problems involved for students in accountancy and public administration and for the reference of teachers, practitioners, and officials.

Wartime Recreation

Parties Plus—Fun for Threesomes.—Edited for the National Recreation Association by Ethel Bowers, Katherine F. Barker Memorial Field Secretary. National Recreation Association, 315 Fourth Avenue, New York City. 1943. 62 pp. 50c.

Booklet which helps recreation leaders provide interesting programs of social activities, especially for those who enjoy folk games, musical games, and other rhythmic activities, for groups of approximately two men to one woman, or two women to one man. Contains descriptions of over forty such activities for the use of those concerned with wartime recreation problems.

Living Conditions in 1860

The Standard of Living in 1860.—By Edgar W. Martin. University of Chicago Press. 1942. x + 451 pp. $4.50 from THE AMERICAN CITY.

An inquiry into living conditions during a period marking a terminal point in the economic history of the United States. Contains sections on the condition of housing, public health and sanitation, streets and sidewalks, police and fire departments, and parks of American cities on the eve of the Civil War.

Firemen's Manual

Duty Manual, No. 167, Wichita Fire Department.—Wichita Fire Department, Wichita, Kans. 1942. 108 pp., mimeo.

A comprehensive manual, outlining the duties and responsibilities of members of the Wichita Fire Department, the rules and regulations and organization of the Department, and the provisions for service rating and promotions, leaves of absence, pensions, and benefits. Also gives information on uniforms, response districts, hazardous buildings, fire inspection, alarm boxes, and hydrants.

Air Raid Protection

Communal Air Raid Shelters.—Prepared under the direction of the Chief of Engineers, U. S. Army, and Published by the Office of Civilian Defense, Washington, D. C. 1942. 25 pp.

A pamphlet which presents, with the aid of diagrams, data and information directly applicable to the design of communal air raid shelters—that is, protective structures intended for construction out-of-doors and for groups of persons larger than individual families. Discusses the surface and semi-buried types of communal shelters and their cost, as well as the air raid shelter problem in general.

War Public Works Bibliography

War Public Works—A Selected Bibliography.—Compiled by Frances Mahoney, Under the Direction of Virginia Breen, Librarian, Federal Works Agency. United States Federal Works Agency Reference Library, Washington, D. C. 1943. iv + 56 pp., mimeo.

Annotated, classified bibliography consisting of book, pamphlet, magazine, and government references on war public works (i. e., any facility necessary for carrying on community life substantially expanded by the national defense program) during World War II selected from published sources covering the period June 1941 through January 1943. The references attempt to cover all phases of war public works—economic, social, engineering, architectural, and management—and to offer suggestions for further research.

Property Tax Limitation

Tax Limitation Laws.—By G. M. Morris. American Municipal Association, 1313 E. 60th St., Chicago, Ill. 1943. 34 pp. 50c.

Object of this report is to present a review of the experience of states and their political subdivisions with over-all property tax limitations. Material is presented which shows that over-all property tax limits relieve only a special group of taxpayers, are neither a logical nor a constructive approach to reformation of the state and local tax systems, are not conducive to economy in government and, where enacted, have so frequently curtailed governmental service and produced fiscal chaos as to permanently discredit the plan. (See page 44 of this issue.)

Public Welfare

Proceedings of the National Conference of Social Work, New Orleans, May, 1942.—Published for the National Conference of Social Work by Columbia University Press, New York. 1942. xi + 670 pp. $5.00.

Fifty-one papers out of the 122 that were presented at the National Conference of Social Work, covering the challenge of war to social work organizations, social and economic problems of the South, minorities and civil liberties, unemployment and industrial relations, migration and the alien, health, men in the service, public social services, group work, children, the delinquent, the alcoholic, the family in debt, administration, research, and social action.

City Sanitation Survey

Street Cleaning and Refuse Collection and Disposal in Nine Cities of the United States.—By Charles A. Howland, Staff Engineer, Bureau of Municipal Research of Philadelphia. 1942. ix + 148 pp., mimeo.

A compilation of information obtained in surveys made by the Bureau of Municipal Research of Philadelphia in the years 1938-1941. The purpose is to obtain detailed information on the methods, equipment, regulations, costs, records, personnel, and other features of street cleaning and refuse collection and disposal in the nine cities of Trenton, Washington, Baltimore, New York, Boston, Rochester, Detroit, Pittsburgh, Philadelphia, to observe the operations at first hand, and to make the information available for planning improvements of these services in Philadelphia. (See also p. 53 of this issue.)

Story of a N. H. Village

The Story of Hill, New Hampshire.—By Dan Stiles. The Sugar Ball Press, Concord, N. H. 1942. 72 pp. $1.75 from THE AMERICAN CITY.

This is the story of the people of the village of Hill, New Hampshire, who were told in 1938 that they would have to move to make way for a flood control reservoir and who undertook the Herculean task of moving the village in its entirety to a new location. With the aid of attractive photographs, the author describes the old village, the planning and building involved in the transition from the old location to the new one, and the finished product—a brand new village above the level of the flood basin.

Anti-Noise Survey

Anti-Noise Ordinances and Other Measures for the Elimination of Unnecessary Noise in 165 U. S. Cities.—National Noise Abatement Council, 9 Rockefeller Plaza, New York City. 1942. Unpaged, offset.

Report of the results of a survey conducted, by means of a questionnaire sent to mayors of all U. S. cities of 25,000 population and over, by the National Noise Abatement Council, in order to ascertain in what cities anti-noise ordinances are now in effect, what methods are used to enforce these ordinances, and if such enforcement methods have resulted in any marked reduction of street noises, of traffic accidents, or the lowering of the general noise level. An investigation was also made into the attitude of the courts and the public toward the anti-noise laws and their enforcement as well as the efforts made to secure the voluntary cooperation of the public.

Detroit Improvement Program

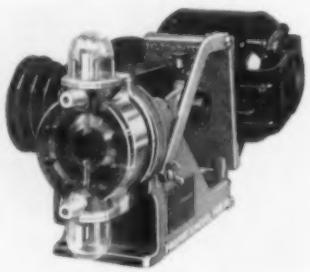
Capital Improvement Program—Six Year Reserve 1943 to 1949—City of Detroit.—Prepared by the Committee Appointed by Mayor Edward J. Jeffries, Jr., March 14, 1941, consisting of the Budget Director, the WPA Coordinator, the City Planner. Prepared in Offices of City Plan Commission, 601 Water Board Building, Detroit, Mich. 1943. 83 pp., mimeo.

In response to the request of the Mayor of Detroit for an annual review of capital improvement programming, the committee appointed for the purpose submitted this Capital Improvement Program which provides a schedule of physical improvements for consideration during each of the six years in accordance with need, desirability, and apparent financial capacity. Outlines amounts of money to be allocated to the different city departments and agencies and includes also a summary of the Detroit improvements contemplated by other governmental agencies.

WHAT IS YOUR CHEMICAL FEEDING PROBLEM?

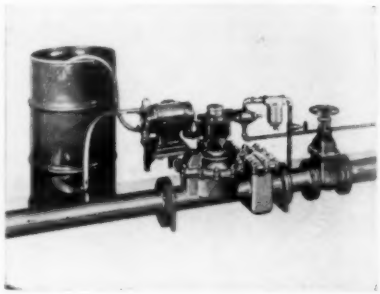
WHETHER your water system is pumped or gravity flow, low or high pressure, % Proportioneers, Inc. % is prepared to furnish you with equipment and service on all your Chemical Feeding (chlorination, ammoniation, calgon, soda ash, lime, alum, etc.) and Proportioning Problems. You are obligated in no way if you send for bulletin information, engineering recommendations, or quotations from

"CHEMICAL FEEDER HEADQUARTERS."



For Pumped Water Systems
Constant Rate Feeders
Manual Adjustment

For Gravity Flow Systems
Flow Proportional Feeder
Automatic Adjustment



99 CODDING ST. % PROPORTIONEERS, INC. % PROVIDENCE, R. I.

GIANT

Reduce Pipe-Laying Costs with a GIANT Pipe Pusher

Write for booklet telling of this small inexpensive tool that pushes pipe (up to 15" diameter) through the ground at the rate of 1 to 5 feet per minute, thus avoiding the heavy expense of trenching.

Address Dept. P

GIANT MFG. CO.
Council Bluffs, Ia.

EVERYBODY EVERY PAYDAY 10%

War Savings Bonds

THE GOAL: 10% OF EVERYONE'S INCOME IN WAR BONDS

When you install the Pay-Roll War Savings Plan (approved by organized labor), you not only perfrom a service for your country but for your *employees*. Simple to install, the Plan provides for regular purchases of War Bonds through voluntary pay-roll allotments.

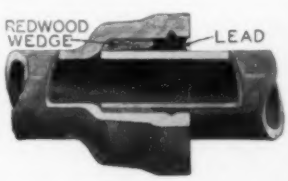
Write for details *today!* Treasury Department, Section R, 709 12th St. NW., Washington, D. C.

McWane

PRECALKED Pipe

"Just Socket and Calk"

No tedious lead melting and pouring when you lay permanent mains with McWane PRECALKED cast iron pipe. As the cross-section view shows



pure lead and California Redwood wedges—the joint materials—are placed in the pipe bell at the foundry. Leak-proof joints are made easily, quickly by untrained men—all they do is "socket the spigot and calk."

All Sizes
1¼" thru 12"

Sand Cast Inside and Outside

McWANE CAST IRON PIPE COMPANY
BIRMINGHAM, ALA. SIZES 1¼" THROUGH 12"

PROMPT SHIPMENTS

Local Defense Councils

Organization Outline for Local Defense Councils.—Prepared by United States Office of Civilian Defense, Washington, D. C. 1942. *v* + 21 *pp.*

A pamphlet setting forth in broad terms the purposes, duties, and functions of the local defense council. Outlines pattern which the United States Office of Civilian Defense believes these councils should follow, but leaves room for local adaptation to meet particular or special needs.

Fire Prevention

The Cocoanut Grove Night Club Fire.—By Robert S. Moulton, Technical Secretary, National Fire Protection Association, 60 Batterymarch St., Boston, Mass. 1943. 19 *pp.* 25c.

A report, given by the National Fire Protection Association, of the facts of the Cocoanut Grove Night Club Fire in so far as the Association has been able to determine them to date. Points to well-established principles of fire safety crystallized in the standards of the N. E. P. A. as furnishing a guide to communities interested in establishing effective fire safety measures, and emphasizes that no codes or ordinances can be any more effective than their enforcement.

Hydraulic Engineering

Handbook of Applied Hydraulics.—Editor-in-Chief, Calvin Victor Davis, Project Engineer, Fontana Dam, N. C., TVA. First Edition. McGraw-Hill Book Co., New York. 1942. *xix* + 1084 *pp.* $7.50 *from* THE AMERICAN CITY.

This book, written in response to the need for a general reference volume on hydraulic engineering, represents the joint efforts of eighteen contributors who have aimed, first, to present the fundamental principles which are basic to each subdivision of hydraulic engineering and, second, to demonstrate the practical applications of these principles by examples which have been drawn largely from the records of recently constructed projects. To the engineer it furnishes practical reference data on the planning and design of modern hydraulic works; to the engineering student it furnishes texts on hydrology, water supply, sewerage, water power, hydraulic structures, and related subjects. It also embodies the progress in hydraulics resulting from the river-development programs recently completed or now under way in this country.

Post-War Planning in Canada

Canadian Post-War Organization.—Special Issue of Public Affairs, Published Quarterly by Institute of Public Affairs, Dalhousie University, Halifax, Nova Scotia. 124 *pp.* 15c.

This issue of the magazine, *Public Affairs*, discusses post-war organization from the Canadian point of view, and attempts to explain to the reader what the New Order implies and by what means it might be achieved. The Archbishop of Canterbury writes on Christianity and reconstruction, and other contributors have articles on providing for the essentials of life, organizing Canadian economic and political life, and the cultural sphere.

Collective Undertakings

Development of Collective Enterprise.—By Seba Eldridge and Associates. University of Kansas Press, Lawrence, Kans. 1943. *viii* + 577 *pp.* $4.50 *from* THE AMERICAN CITY.

This scholarly book, which is intended to "throw some light on the dynamics of an emergent economy destined to prevail in the future," presents the findings of a five-year investigation of collective enterprise by a group of thirty collaborators. Attention has been centered mostly on the objective of determining, through an inductive study, the basic factors in the growth of collective undertakings, particularly in the United States and the book contains a great quantity of data concerning the actual operation of socialized activities in this country. Only a minimum of technical terminology has been used in the discussions, and there is emphasis on factual materials.

Control of Substandard Housing

The Improvement of Local Housing Regulation Under the Law.—By Subcommittee on Housing Regulation of the Committee on the Hygiene of Housing, The American Public Health Association. Reprinted from American Journal of Public Health, November, 1942, *for the National Association of Housing Officials, 1313 E. 60th St., Chicago, Ill.* 1942. 14 *pp.* 25c.

An exploration of essential principles involved in the problems of legal control of substandard housing, with emphasis on the specific problem of the adequate control of housing from the viewpoint of public health. Discusses the legal basis, the specific objectives and content, and the administration and enforcement of housing regulations.

Structural Air Raid Defense

Structural Defense Against Bombing.—The Engineering Institute of Canada, 2050 Mansfield St., Montreal. 1942. 55 *pp.* $1.00.

A technical record of some of the experiences and practices of British authorities in regard to structural air raid precautions, intended as an aid to engineers and architects. Gives a thorough discussion of bombing and its effects on structures, air raid shelters, bomb-resisting structures, shelter ventilation, protection of glass, structural protection against fire, protection of industry and vital plant, and building design in relation to attack.

Property Tax Assessment

Depreciation of Buildings for Assessment Purposes.—By Ronald B. Welch. National Association of Assessing Officers, 1313 E. 60th St., Chicago, Ill. 1943. 66 *pp.* $2.00.

A study of depreciation for property tax assessment purposes, which describes the methods actually employed by assessors. The author emphasizes that the verdict as to the best method must be reached by the assessor himself out of the wealth of his own experience. The purpose of this pamphlet is to sharpen the issues and set forth the arguments. (See page 87 of this issue.)

Wartime Control of Food

Food Control in Great Britain.—International Labour Office, 3480 University Street, Montreal, Can. Distributed in the United States by The International Labour Office, 734 Jackson Place, Washington, D. C. 1942. *vi* + 272 *pp.* $2.00.

An analysis of the problems of production, distribution, and consumption of food in Great Britain during the present war, and the measures which have been adopted to solve these problems. This study is concerned with the actual operation of government planning on a comprehensive scale, and in its final section deals with the post-war significance of the results of wartime control. Discusses the problem of food control in general, the control of supplies and of the channels of distribution, rationing and priority distribution, and agricultural and food price control policy.

Publications on Municipal Affairs

Selected Items from the Urban Reference.—Bureau of Urban Research, Princeton University, Princeton, N. J. Published occasionally.

Summary of pertinent information contained in current periodicals, books, pamphlets, and other documents relating to various phases of urban planning and city problems. Complimentary copies sent to anyone to whom the Selected Items would prove useful.

Federal Taxes and Charity

Federal Taxes and Community Chest Giving.—Community Chests and Councils, Inc., 155 E. 44th St., New York City. 1942. 8 *pp., offset.* 15c.

Brief presentation of provisions of the Federal Revenue Act which encourage corporations and individuals to contribute to private charitable, religious, and educational institutions.

Utilities' Payments to Texas Cities

Street Rental and Other Payments Made to Texas Cities by Public Utilities.—League of Texas Municipalities, 2220 Guadalupe St., Austin. Bulletin No. 23. 1942. 16 *pp., mimeo.* $1.00.

A list of the Texas cities receiving street rental and other payments from utilities and telephone companies, including the names of the individual companies, the amounts of the payments, and the month and year payments were made. Data collected by Field Representative from July 1941 to November 1942.

Texas Electric Utilities

Municipal Electric Utilities in Texas.—By Robert H. Gregory. Municipal Studies No. 20, prepared by the Bureau of Municipal Research, Austin, Texas. 1942. 295 *pp.*

This work traces the history and legal status of municipal electric utilities in Texas, their management, operation, and control, financial policies and operation results, budgeting and accounting, auditing and reporting, rates, and relation to rural electrification. Prepared for the benefit of city administrators, councilmen, finance officers, utility managers, and others interested in the operation of municipal electric utilities in cities contemplating the installation of electric plants or those seeking to make more efficient the management of their present holdings.

Social Workers' Housing Manual

Housing Handbook for Social Workers.—Caseworkers' Committee on Housing, Family Service Section, Welfare Council of New York City, 44 E. 23d St., New York. 1942. 18 *pp.* 25c.

Housing information, presented in concise form, primarily for the use of caseworkers in meeting the housing problems of their clients. Gives information on the governmental agencies and legislation connected with housing, advisory services, landlord-tenant relations, correcting undesirable conditions in multiple dwellings, reporting violations, and evaluating an apartment.

Youth and Crime

The Correction of Youthful Offenders.—Law and Contemporary Problems, School of Law, Duke University, Durham, N. C. Autumn, 1942. 195 *pp.* $1.00.

A symposium to examine the Youth Correction Authority Act, drafted by the Criminal Justice-Youth Committee of the American Law Institute, and also to inquire into the problem of rehabilitating criminal youth, whether through the medium of the Model Act or otherwise. Among the articles there is a statement of the findings on the relation of youth and war to crime; an outline of the provisions of the Model Act and the problems it would raise; presentation of two adaptations of the Act; discussion of whether or not indeterminate control of offenders is justifiable; and examination of a model Youth Court.

Housing Education

Evaluating Rural Housing.—By Charles I. Mosier, Ph.D., Social Security Board, Washington, D. C. Published by the Florida Curriculum Laboratory, College of Education, University of Florida and State Department of Education, Gainesville. Publication made possible by a grant from the Alfred P. Sloan Foundation, Inc. 1942. 88 *pp.*

This is the summary of a report of the initial measurement phase of the Sloan Project in Applied Economics of the University of Florida—an experiment in developing more satisfactory materials for the use of teachers and pupils in housing education and in finding out whether housing instruction will improve the economic conditions of communities. A study was made of actual housing conditions in six rural communities, and thus the report presents certain pertinent information concerning housing standards as well as data concerning scholastic achievement in the schools of these communities.

"Ze Yanquis are Coming..."

To a broken and bewildered France, has come the supreme tragedy a nation can suffer; beaten on the battlefield, betrayed by its leaders, overrun by a dictator, and most humiliating shame of all—forced to support with its men and its arms the cause of its conqueror.

▶ Yet no American can believe in his heart that the land which proclaimed to the world the flaming message of "Liberty, Equality, Fraternity"—can ever be really beaten, ever be finally destroyed, ever be completely deprived of its nobleness of spirit.

▶ We feel, we believe, we know, that true Frenchmen are still on *our* side, and to them our actions and our plans should be explained—whether about Madagascar or Martinique, North Africa or the Continent, the conduct of the war, or the hopes for the peace to come.

▶ *It is estimated that 90% of the radios still in the possession of the French, are capable of receiving foreign short-wave broadcasts.*

▶ This line of communication, linking America with the French, is being used and strengthened every day by broadcasts over short-wave stations WRCA and WNBI. RCA equipment, used by these stations, is helping penetrate the black wall of silence and isolation the Nazis would impose on France....We are proud that we can have a share in the momentous task of breaking down this wall—the task of keeping aflame the spirit and courage of a great nation.

RCA

RCA POLICE RADIO

RCA Victor Division

RADIO CORPORATION OF AMERICA • Camden, N. J.

Educational Planning

Planning Schools for Tomorrow—The Issues Involved.—By John Guy Fowlkes, with the cooperation of The Committee on Planning for Education of United States Office of Education, Washington, D. C. 1942. *vii* + 26 *pp.* 10c.

A concise statement on the meaning of and need for planning, on the important issues in educational planning, and on suggestions concerning the ways and means of such planning. Intended to be useful to individuals and groups interested in improving their own schools and in seeing how an educational program is related to the larger problem of comprehensive long-range social planning.

A.S.T.M. Standards

A.S.T.M. Standards on Mineral Aggregates.—American Society for Testing Materials, Philadelphia, Pa. 1942. *vi* + 126 *pp.* $1.35.

Publication issued for the purpose of bringing together in convenient form the various American Society for Testing Materials standard and tentative standard specifications and methods of test pertaining to all kinds of mineral aggregates. Intended to be useful to producers, users, and investigators of these materials.

A. S. T. M. Standards on Paint, Varnish, Lacquer and Related Products—American Society for Testing Materials, 260 Broad St., Philadelphia, Pa. 1942. *xi* + 408 *pp.* $2.25.

A compilation of all of the A. S. T. M. specifications, methods of test, and definitions pertaining to paint, varnish, lacquer, and related products so as to have all of them together in convenient form for the use of the industry.

State Planning Progress

State Planning.—National Resources Planning Board. United States Government Printing Office, Washington, D. C. 1942. *viii* + 134 *pp.* 30c.

A report on the progress and achievements of state planning, which summarizes the present and proposed programs of work of each state planning board as of June 1, 1942, and lists the members of each board and its legal status. A recent compilation of state legislation on planning, zoning and platting and a list of state conservation laws are also included.

Mileage Guide

Standard Highway Mileage Guide.—Rand, McNally, and Co., 536 S. Clark St., Chicago. 1942. $4.00 *from* THE AMERICAN CITY.

This new, improved Standard Highway Mileage Guide gives specific mileage between 500 key cities and towns in the U. S., Canada, and Mexico. A complete set of large-scale road maps includes some 90,000 cities, towns, and villages, with roads, route numbers, types of pavement, and mileages between towns. Includes large-scale distance maps of principal metropolitan areas, giving mileages between small suburbs and communities.

Other Reports Received

New Media for Promoting Effective Resource Management.—Northwest Regional Council, Portland, Ore. Reprinted from Education, January, 1943. 6 pp.

Standards of Child Health, Education, and Social Welfare.—United States Department of Labor, Washington, D. C. 1942. vi + 21 pp. Apply to Superintendent of Documents, Washington, D. C.

City Employees and Consumer Credit.—By Walter Kuzmich. Institute of Welfare Research, Community Service Society of New York, 105 E. 22d St., New York City. 1942. viii + 50 pp., offset.

The Plan of Action.—New Jersey Taxpayers Association, Broad St. Bank Building, Trenton, N. J. 1942. 24 pp.

State Publications: A Field for War Curtailment.—Division of Administrative Management and Research, State Capitol, St. Paul, Minn. 1942. 57 pp., offset.

Crime Control—Is "State Police" the Answer?—Department of Library and Archives, Arizona State Legislative Bureau, Phoenix, Ariz. 1942. 30 pp., mimeo.

ALABAMA.—State Penal Administration in Alabama, by Malcolm C. Moos. Bureau of Public Administration, University of Alabama, University, Ala. 1942. xii + 178 pp.

CHARLESTON, S. C.—Year Book, City of Charleston, 1941. 256 pp.

CHICAGO, ILL.—Review, City of Chicago Welfare Administration. 1942. i + 104 pp., offset.

GRAND RAPIDS, MICH.—Annual Report, 1941-1942, Department of Public Service. 54 pp.

HAWAII.—Report to the Governor by the Superintendent, year ending June 30, 1942. 47 pp.

HOUMA, LA.—"Our Home Town." A Municipal Report, 1928-1941, by the Mayor and Board of Aldermen. Prepared by the Bureau of Government Research, Louisiana State University, Baton Rouge, La. 1942. 36 pp.

HOUSTON, TEXAS.—"The Major Street Plan for Houston and Vicinity, 1942." Report of the City Planning Commission. 14 pp.

JACKSON, MISS.—Annual Report, for fiscal year ending September 30, 1942. 28 pp.

KANSAS.—Revision of County Salary Schedules. Research epartment, Kansas Legislative Council. v + 17 pp., offset.

KENTUCKY.—Annual Report, Kentucky State Board of Registration for Professional Engineers to Governor Johnson. 1942. 123 pp.

LOS ANGELES, CAL.—"Homes for Heroes." Annual Report, Housing Authority of City of Los Angeles, 1941-42.

NEW YORK, NEW JERSEY, CONNECTICUT.—Annual Report, 1942, Interstate Commerce Commission. 87 pp., offset.

PENNSYLVANIA.—War Highway Traffic Control in Pennsylvania. Prepared by Traffic Control Committee of State Council of Defense, Harrisburg, Pa. 1942. 28 pp., offset.

MICHIGAN.—State and Federal Lands in Michigan. Michigan State Planning Commission, Lansing, Mich. 1943. 40 pp.

MISSISSIPPI.—Mississippi Highway Facts. ivision of Highway Planning, Mississippi State Highway Department. 1942. 47 pp.

NEBRASKA.—The Compensation of Officers and Employees of the State and Local Governments in Nebraska. Research Department, Nebraska Legislative Council, Lincoln, Nebr. 1943. 55 pp., mimeo.

RICHMOND, IND.—Annual Report, Controller, City of Richmond, for year ending Dec. 31, 1942. 16 pp.

RUMFORD, MAINE.—Reports of Officers, Town of Rumford, 1942. 82 pp.

ST. LOUIS, MO.—Report and Recommendations, Department of Public Safety, fiscal year 1941-1942. 80 pp.

—Books and Bullets—How the St. Louis Public Library is Helping to Win the War. Including Annual Statistical and Financial Aeport, 1941-1942. 12 pp.

SAN DIEGO, CAL.—Manager's Report, fiscal years 1940-42, 1941-42. 41 pp., mimeo.

SAN FRANCISCO, CAL.—An Economic and Industrial Survey of the San Francisco Bay Area. California State Planning Board. 1942. iv + 28 pp., mimeo.

SOUTH CAROLINA.—Towns of South Carolina —Incorporated Dates, Population, Utilities, Communications, County Political Representation. South Carolina State Planning Board. 1942. 43 pp., mimeo.

STOCKBRIDGE, MASS.—Annual Reports of the Town Officers of the Town of Stockbridge, for year ending December 31, 1942. 25 pp.

VERMONT.—"Roads and Bridges." Biennial Report, State Highway Board, fiscal years 1941-1942. 76 pp.

WILLIAMSTOWN, MASS.—Annual Report of the Officers of the Town of Williamstown, for year ending December 31, 1942. 107 pp.

YOUNGSTOWN, OHIO.—Annual Report of the Trustees of the Sinking Fund of the City of Youngstown, for the year ending December 31, 1942. 28 pp., mimeo.

NON-CLOGGING
for Sewage Service

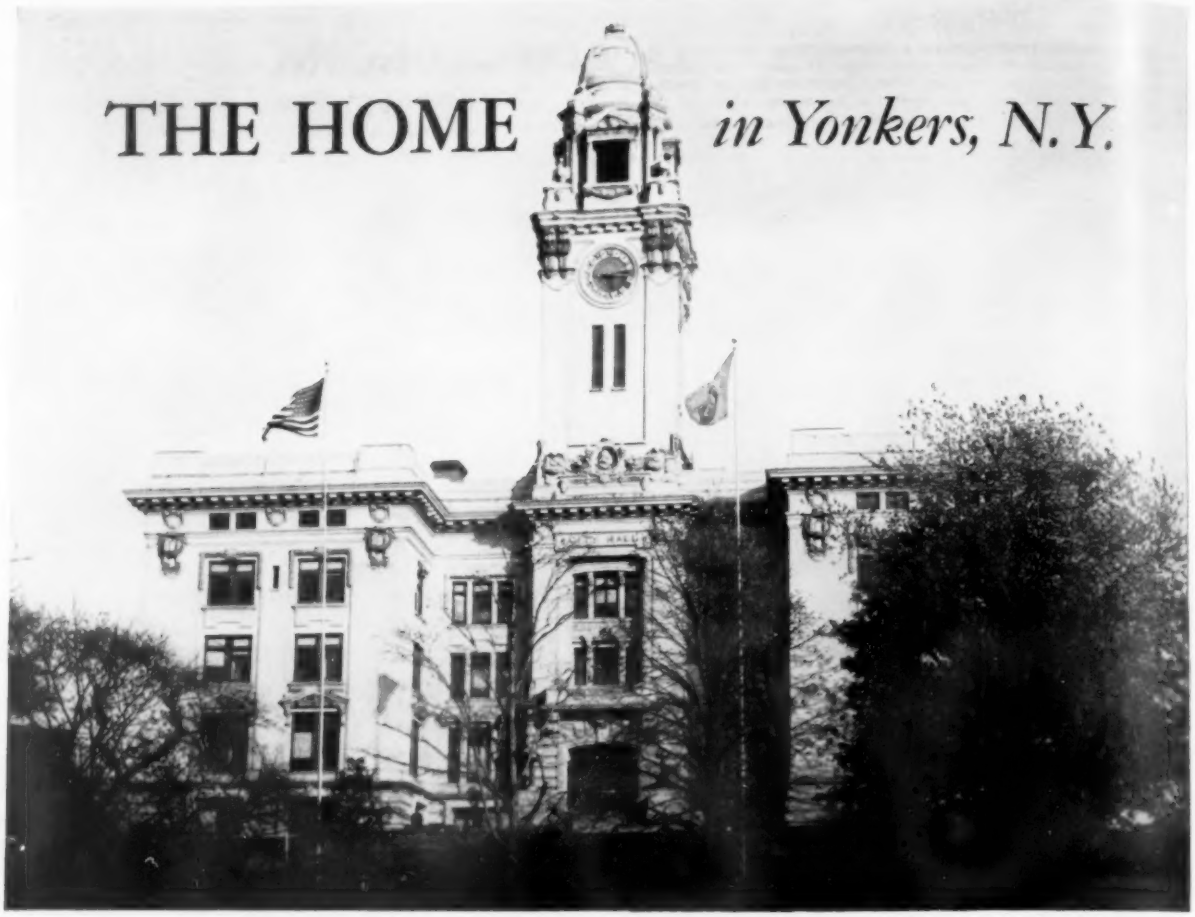
Morris Non-Clogging Sewage and Storm Water Pumps are serving large and small communities all over the country. Built in standard and high-speed types . . . horizontal and vertical. Also with screw and mixed flow propellers. Write for bulletins.

MORRIS MACHINE WORKS
BALDWINSVILLE NEW YORK

MORRIS
CENTRIFUGAL PUMPS
for all municipal services

GRIFFIN
RIFFIN
WELLPOINT SYSTEMS
JETTING PUMPS
FOR SALE RENT
Prompt Shipments
Send for our New 60 page illustrated catalog
"GRIFFIN POINTED WELLPOINT FACTS" chock full of latest information on Wellpoint Systems for dewatering, emergency and permanent water supply systems, also information on pressure pumps and data for jetting.
GRIFFIN WELLPOINT CORP.
881 EAST 141st ST. • NEW YORK, N. Y.
Phones: MElrose 5-7704-5-6

THE HOME *in Yonkers, N.Y.*



City Hall, Yonkers, N. Y.

Out of "De Jonkheer's Land" of 1646, evolved the name of Yonkers, the "Terrace City" and the fifth largest of New York State.

Reorganization of this city's entire insurance program together with a general lowering or rates, the adoption of a plan extending over five years and the correction of fire hazards, saved the city and taxpayers $10,000 a year in premiums while increasing the amount of municipal fire insurance carried by $400,000.

Said the 1941-42 report of the city's Architectural Engineer: "Data were furnished and other assistance was rendered to an engineer of The Home Insurance Company in connection with appraisals and recommendations made by him for insurance on the various buildings; his appraisals and recommendations were checked; a chart was prepared to show the difference between our appraisals and those of the said engineer and between the insurance carried by us in each case and that recommended by him; and we then determined the proper amounts of insurance for the 1942 schedule."

Our Engineering Department invites inquiries from the officials of any city.

Engineering Department

THE HOME FLEET OF INSURANCE COMPANIES

59 MAIDEN LANE NEW YORK

THE HOME INSURANCE COMPANY NEW YORK
THE BALTIMORE AMERICAN INSURANCE CO.
THE CAROLINA INSURANCE COMPANY
CITY OF NEW YORK INSURANCE COMPANY
THE FRANKLIN FIRE INSURANCE COMPANY
THE GEORGIA HOME INSURANCE COMPANY
THE GIBRALTAR FIRE & MARINE INSURANCE CO.
THE HOMESTEAD FIRE INSURANCE COMPANY
NATIONAL LIBERTY INSURANCE COMPANY
THE NEW BRUNSWICK FIRE INSURANCE CO.
THE PAUL REVERE FIRE INSURANCE COMPANY
THE HOME INDEMNITY COMPANY

Conventions— When and Where

Mar. 25-26—Trenton, N. J.
NEW JERSEY SEWAGE WORKS ASSOCIATION. (Hotel Stacy-Trent) Sec., John R. Downes, Plainfield, N. J.

Mar. 25-26—Syracuse, N. Y.
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Spring War Conference Meeting. (Hotel Syracuse) Sec., R. K. Blanchard, 50 W. 50th St., New York, N. Y.

Mar. 29-30—New Orleans, La.
LOUISIANA MUNICIPAL ASSOCIATION. Annual Convention. (Hotel Jung) Sec., Mrs. Henry Jastremski, City Hall, Baton Rouge, La.

***Apr. 2—Washington, D. C.**
NATIONAL FIRE WASTE COUNCIL. Annual Meeting. (Chamber of Commerce Bldg.) Sec., Paul L. Hardesty, 1615 H St., Washington, D. C.

Apr. 7-9—Hamilton, Ont.
AMERICAN WATER WORKS ASSOCIATION—CANADIAN SECTION. (Hotel Royal Connaught) Sec., Dr. A. E. Berry, Ontario Dept. of Health, Parliament Bldgs., Toronto, Ont.

***Apr. 8-9—Chicago, Ill.**
MIDWEST POWER CONFERENCE. (Palmer House) Dir., Stanton E. Winston, Illinois Institute of Technology, Chicago, Ill.

***Apr. 12—Mansfield, O.**
AMERICAN WATER WORKS ASSOCIATION—OHIO SECTION. Spring Conference. (Hotel Mansfield-Leland) Sec., T. R. Lathrop, State Dept. of Health, Columbus, O.

Apr. 12-16—St. Louis, Mo.
NATIONAL CONFERENCE OF SOCIAL WORK. Regional Meeting. Gen. Sec., Howard R. Knight, 82 N. High St., Columbus, O.

Apr. 16-17—Excelsior Springs, Mo.
MISSOURI ASSOCIATION OF PUBLIC UTILITIES. Annual Meeting. (Hotel Elms) Asst. Sec., Jesse Blythe, 101 W. High St., Jefferson City, Mo.

***Apr. 19-20—Little Rock, Ark.**
ARKANSAS WATER AND SEWAGE WORKS CONFERENCE. Annual Conference. (Hotel Marion) Sec., Harrison Hale, Univ. of Arkansas, Fayetteville, Ark.

Apr. 26-28—Davenport, Ia.
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Annual Conference. (Hotel Marion) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

***Apr. 29-30—Indianapolis, Ind.**
AMERICAN WATER WORKS ASSOCIATION—INDIANA SECTION. (Hotel Antlers) Sec., H. G. Horstman, 603 Traction Terminal Bldg., Indianapolis, Ind.

***May 3-6—Richmond, Va.**
BUILDING OFFICIALS' CONFERENCE OF AMERICA. (Hotel John Marshall) Sec.-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

May 7-8—Bellingham, Wash.
AMERICAN WATER WORKS ASSOCIATION—PACIFIC NORTHWEST SECTION. (Hotel Leopold) Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

May 10-13—Chicago, Ill.
NATIONAL FIRE PREVENTION ASSOCIATION. Annual Meeting. (Palmer House) M'ng. Dir., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

***May 12-13—Atlanta, Ga.**
ASSOCIATION OF COUNTY COMMISSIONERS OF GEORGIA. Annual Convention. (Hotel Ansley) Exec. Sec., Miss Betty Peeler, 134 Peachtree St., N. W., Atlanta, Ga.

***May 13-14—Wenatchee, Wash.**
ASSOCIATION OF WASHINGTON CITIES. Exec. Sec., Chester Biesen, Univ. of Washington, Seattle, Wash.

***May 14-15—Billings, Mont.**
AMERICAN WATER WORKS ASSOCIATIO—MONTANA SECTION. Wartime Conference. (Hotel Northern) Dir., Herbert B. Foote, Division of Water and Sewage, State Board of Health, Helena, Mont.

May 16-21—New York, N. Y.
WAR CONFERENCES ON PLANNING AND HOUSING. (Hotel Pennsylvania) Organizations of officials, Walter H. Blucher, Executive Director, American Society of Planning Officials, and Hugh R. Pomeroy, Director, National Association of Housing Officials technicians, Miss Barbara Terrett, Executive Secretary, American Institute of Planners—all of 1313 East 60th Street, Chicago, Ill.; and citizens' organizations, Miss Harlean James, Executive Secretary, American Planning and Civic Association, Union Trust Building, Washington, D. C. (Definite dates for each group to be announced later.)

May 21-25—Cleveland, O.
COMMUNITY CHESTS AND COUNCILS, INC. Annual Meeting. (Hotel Cleveland) Exec. Vice-Pres., Allen T. Burns, 155 East 44th St., New York, N. Y.

May 24-28—Cleveland, O.
NATIONAL CONFERENCE OF SOCIAL WORK. Regional Meeting. Gen. Sec., Howard R. Knight, 82 N. High St., Columbus, O.

May 26-28—Cincinnati, O.
AMERICAN INSTITUTE OF ARCHITECTS. Annual Meeting. (Hotel Netherlands-Plaza) Exec. Sec., E. C. Kemper, 1741 New York Ave., Washington, D. C.

May 27-28—Harrisburg, Pa.
PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP COMMISSIONERS. Annual Convention. (Hotel Penn Harris) Sec-Treas., H. A. Fritschman, Upper Darby, Pa.

***June 8—Harrisburg, Pa.**
PENNSYLVANIA WATER WORKS OPERATORS ASSOCIATION—WESTERN SECTION. Annual Meeting. (Hotel Penn-Harris) Sec., I. M. Glace, 22 South 22nd St., Harrisburg, Pa.

June 8-11—Pittsburgh, Pa.
SMOKE PREVENTION ASSOCIATION. Annual Meeting. (Hotel William Penn) Sec., Frank A. Chambers, 139 N. Clark St., Chicago, Ill.

***June 9—Harrisburg, Pa.**
PENNSYLVANIA SEWAGE WORKS ASSOCIATION. Anual Conference. (Hotel Penn-Harris) Sec.-Treas., Bernard S. Bush, Kirby Health Center, Wilkes-Barre, Pa.

June 9-11—Albany, N. Y.
NEW YORN STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting. (Hotel Ten Eyck) Exec. Sec., William P. Capes, 6 Elk St., Albany, N. Y.

June 14-16—Los Angeles, Cal.
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Semi-Annual Meeting. (Hotel Biltmore) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

***June 15-17—Pittsburgh, Pa.**
MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF THE UNITED STATES AND CANADA. (Hotel William Penn) Exec. Sec., Carl H. Chatters, 1313 E. 60th St., Chicago, Ill.

June 15-18—Cleveland, O.
AMERICAN WATER WORKS ASSOCIATION. Conference on War Winning Water Works Operations. (Hotels Carter and Statler) Sec., Harry E. Jordan, 22 E. 40th St., New York, N. Y.

***June 21-25—Cleveland, O.**
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS. National Meeting. Sec., H. H. Henline, 33 W. 39th St., New York, N. Y.

June 24 24-26—Baltimore, Md.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Convention. (Hotel Lord Baltimore) Sec., Charles E. Clark, Box 217, Wayne, Pa.

July 19-20—Harrisburg, Pa.
PENNSYLVANIA CHIEFS OF POLICE ASSOCIATION. War Conference. (Hotel Penn-Harris) Sec., F. B. Titus, Lansdowne, Pa.

* First appearance on this page.

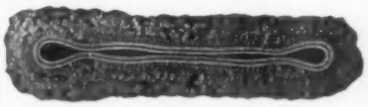
"B" Tapping Machine

THE LEADER FOR YEARS

Mueller invented the first machine for tapping and inserting corporation stops under pressure in 1871. Today the MUELLER machine is still the accepted standard everywhere—in use by 95% of all water works . . . Why? Because it is easy to use, operates in any position, adapts itself to many kinds and sizes of pipe, needs no water shut-off, and saves YOUR time and YOUR money throughout its long life . . . A MUELLER machine with MUELLER corporation stops—the perfect combination.

MUELLER CO.
DECATUR, ILL.

WHY—



The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

— Also —

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction, cheaper than one priced at $7,000 when loaded with other construction.

BI-LATERAL FIRE HOSE CO.
20 N. Wacker Drive, Chicago, Illinois

AFTER VICTORY
WHAT ARE YOUR PLANS?

84-HD KETTLE

Unconditional Surrender must come first! But while we are all working to the end, let's think of the future. Let's do some post-war planning, too.

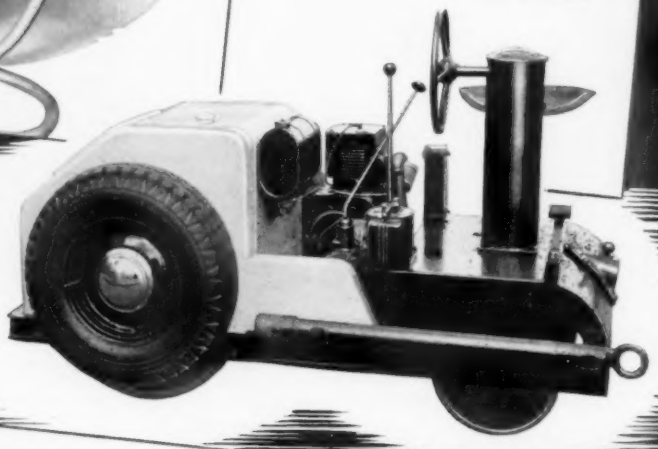
Plan so you'll be ready to put our vital Highway System back into tip-top shape. Plan the equipment you'll need to do the job, the most efficient way. Plan to purchase Littleford Equipment to do modern Highway Building and Maintenance jobs.

Littleford 84-HD Kettle, Trail-O-Rollers, Oil Burners and the No. 101 Utility Spray Tank are the most efficient units of their kind. Simple in construction, easy to operate.

Stick to winning the war, but think of Littleford Black Top Road Equipment for making a better world for the future.

BUY WAR BONDS AND STAMPS

TRAIL-O-ROLLER



TORCH TYPE BURNER

101 UTILITY SPRAY TANK

LITTLEFORD

LITTLEFORD BROS., INC.
500 E. PEARL ST. CINCINNATI, OHIO

BLACK TOP ROAD MAINTENANCE EQUIPMENT SINCE • 1900

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

News and Illustrations

Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

A Non-Critical Pipe

A pipe used for many years as electrical conduit tries its hand in the water and sewerage field

One material useful in municipal work that has been quietly weathering the storm of war demands and escaping the tag of astronomical priorities is a pipe manufactured by the Fibre Conduit Co., Orangeburg, N. Y. It consists of 25 per cent by weight cellulose fibres and 75 per cent coal-tar pitch, neither essential to war production.

It is not a spectacular new development, nor is it an "ersatz" or inferior "Victory" substitute. It is a fully qualified alternate or replacement having its own advantages and limitations. It has a commendable service record having been used for more than 50 years as an underground electrical conduit in a wide variety of soils. It has been used continuously as a sewer pipe since as far back as 1907. However, it is not a cure-all for the war-induced pipe problem and should not be considered as such.

The characteristics of the pipe are important. They are as follows:

It is highly resistant to most acids, alkalies, or other corrosive substances. It will not tuberculate or pit. It carries water without affecting the taste.

It has good flow characteristics—William and Hazen coefficient of 140-150.

It is light, easily transported, and simple to install. It can be sawed with ordinary wood-working tools. Its installed costs are reported to be low.

Its tapered sleeve joints assure a continuous, water-tight line highly resistant to root growths.

It does not stand high pressures nor continuous high temperatures.

It is lower in mechanical strength than steel or cast-iron pipe and accordingly must be supported when in exposed locations.

It is limited in size between the range of from one to eight inches. This is a "duration" feature. Plant capacities cannot be enlarged to accommodate other sizes now.

It does not stand pressures particularly well and should be studied carefully before use in water distribution systems or force lines.

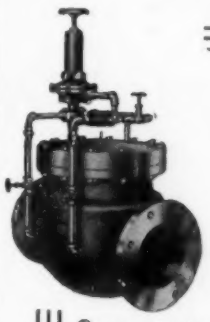
The installed price is reported to be lower than cast-iron pipe.

Municipal officials will find the pipe desirable—aside from its general use as an electrical conduit—for sewerage service lines, for small sewer mains, for connecting pipe in either water or sewage-treatment plants where pressures are not involved. It also can be used for chemical feed lines, for vent stacks handling corrosive fumes, for downspouts or drains. The pipe also is manufactured in a perforated form, making it useful in the drainage field, or in filter beds and foundation footing drains. It can also be used as a lining for shallow wells. The Wisconsin Board of Health already has recommended its use for this purpose in a recent bulletin.

Allis-Chalmers Personnel Changes

Three important promotions in the Allis-Chalmers Tractor sales and engineering organizations have been announced by W. A. Roberts.

A. W. Van Hercke has been moved from sales manager to assistant manager of the Tractor Division. He will coordinate all engineering and development work. A. F. McGraw is now general sales manager, heading up industrial and agricultural sales of the Tractor Division. R. A. Crosby of the advertising department, temporarily loaned to the Salvage Section of the WPB, will be advertising manager.



WATER PRESSURE RELIEF VALVE

★

Sizes: 3" to 36" Angle and Globe Patterns

On excess pressure, due to line surges or excess pumping head, this valve automatically opens to dissipate necessary water volume to maintain desired line pressure. The valve is arranged either with atmospheric pilot valve exhaust or self-contained, according to service conditions and requirements.

Valves may be arranged to open at abnormal pressures and held open under subnormal pressures until the surge subsides, and then close when normal conditions prevail.

Write for Specifications

GOLDEN-ANDERSON VALVE SPECIALTY CO.

Fulton Building Pittsburgh, Pa.

Jeffrey

FOR A COMPLETE LINE OF SEWAGE AND WATER-TREATMENT EQUIPMENT . .

Bar screens (mechanically-cleaned)
Chemical feeders (electric vibrating)
Flocktrols (controlled flocculation)
Grit washers
Grit collectors
Primary and secondary sludge collectors
Sludge elevators
Screenings grinders
Scum removers
(All Patented)

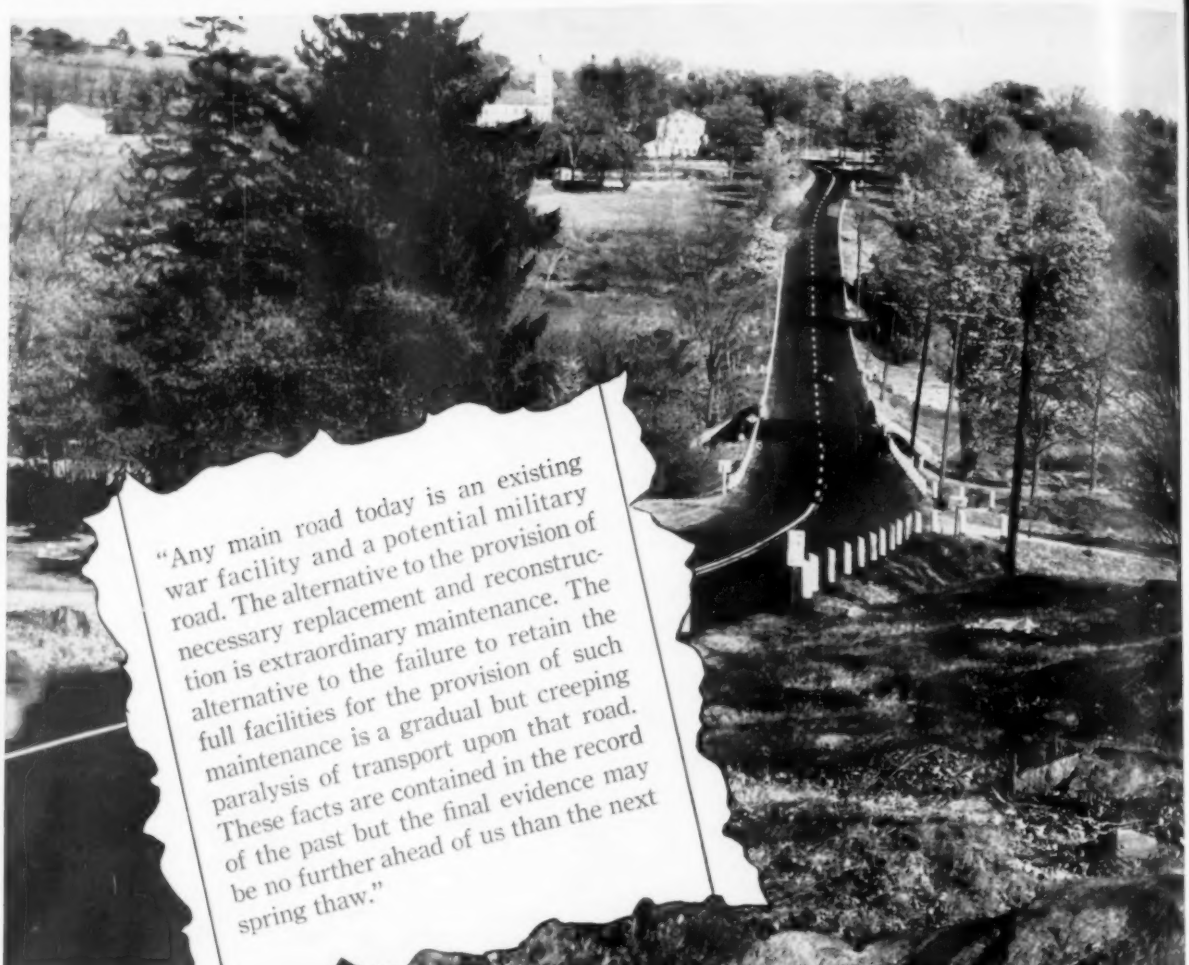
Jeffrey engineers have had years of experience—have made many installations—can offer technical data on both equipment and plant design. Write

The Jeffrey Mfg. Co.

970-99 NORTH FOURTH STREET COLUMBUS, OHIO

Baltimore, Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Harlan, Houston, Huntington, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, Salt Lake City, Scranton

ATTENTION! HIGHWAY OFFICIALS AND ENGINEERS


"Any main road today is an existing war facility and a potential military road. The alternative to the provision of necessary replacement and reconstruction is extraordinary maintenance. The alternative to the failure to retain the full facilities for the provision of such maintenance is a gradual but creeping paralysis of transport upon that road. These facts are contained in the record of the past but the final evidence may be no further ahead of us than the next spring thaw."

THOMAS H. MacDONALD, Commissioner of Public Roads—in ENGINEERING NEWS-RECORD

THUS Commissioner MacDonald sums up the vital problem of wartime road maintenance and repair that faces highway officials and engineers today.

Excessive wear to tires and damage to cars are only part of the cost of poor roads. Neglected highways mean delays in transportation of vital food and military supplies, lost man hours by America's industrial workers.

In considering your maintenance problems, remember that there is a right type of Tarvia* and a right Tarvia method for almost every type of road maintenance and repair. The Barrett Tarvia field man will be glad to show you the most economical ways to service your district quickly and dependably. He has at his command all Barrett's 37 years of successful paving experience.

Let him suggest how you can keep your roads in the best condition to meet the requirements of a nation at war.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK
ONE OF AMERICA'S GREAT BASIC BUSINESSES

New York . . Chicago . . Birmingham . . St. Louis . . Detroit . . Philadelphia . . Boston
Providence . . Rochester . . Minneapolis . . Cleveland . . Columbus . . Toledo . . Youngstown
Syracuse . . Buffalo . . Cincinnati . . Bethlehem . . Portland, Me. . . Bangor, Me.
Norwood, N. Y. . . Cromwell, Conn. . . Norwich, Conn. . . Savannah, Ga. . . Norfolk, Va.
In Canada: THE BARRETT COMPANY, LTD.: Montreal, Toronto, Winnipeg, Vancouver

Barrett Tarvia*

*Reg. U. S. Pat. Off.

Army, Navy, and company officials display the "E" pennant awarded to Fairbanks-Morse at the Beloit, Wis., plant. Similar ceremonies were held at Freeport, Ill., and Three Rivers, Mich. The officials displaying the flag here are left to right: Rear Admiral E. L. Cochrane, USN; Commander J. M. Hicks, USN; Lt. Col. John N. Gage; A. C. Howard, Gen. Mgr. of the Beloit Works; and Col. Robert H. Morse, Pres.

Three "E" Awards to Fairbanks-Morse

Three Army-Navy "E's" were awarded during the past month to the plants of Fairbanks, Morse & Co. at Beloit, Wis.; Freeport, Ill.; and Three Rivers, Mich. The equipment built at the three plants of the company is used by the Navy, Army, Coast Guard, Maritime Commission, Air Corps, and the Treasury Department for lend-lease to the United Nations.

The program of events at each of the three plants was identical, varying only in location and personnel. At Beloit the Army-Navy "E" burgee was presented to the company by Admiral E. L. Cochrane, U.S.N., Chief of the Bureau of Ships, and it was accepted on behalf of the employees by Mr. A. C. Howard, general manager of the Beloit works. Col. Robert H. Morse, president of the corporation, expressed appreciation for the award.

At the Freeport ceremonies, the presentation of the Army-Navy "E" award was made by Lt. Commander Grismer, U.S.N.R. Col. J. F. Butler presented the employees pins to two of the oldest employees and the acceptance of the burgee was made by Leo Madden, general manager of the Freeport works, while the remarks of appreciation were made by A. E. Ashcraft, vice-president of the company in charge of manufacturing.

Captain Robert Henderson, U.S.N. presented the flag at the Three Rivers ceremony.

Advertising Agents Form Partnership

The Hammond-Goff Company replaces the advertising firm of Alden M. Hammond, located for the last 11 years at Providence, R. I., and now being conducted as a partnership by Alden M. Hammond and Carleton Goff. The address continues to be 26 Custom House St., Providence, R. I.

Town Rebuilds Electric Meters

Increased demands for electricity on the part of several customers in the town of Norwood, Mass., made it necessary for the municipal light department to change part of the distribution system from 3-phase three-wire, to 3-phase four-wire grounded neutral.

This required among other things, changes in the meters used. Investigation showed that new meters would cost approximately $1,500 and that high priorities were required to get them. Finally it was decided to rebuild the old Westinghouse RI meters then in use, because of the cost of new ones and because parts could be obtained on low priority.

It took about a day and a-half to rebuild and recalibrate each meter. The meters were completely torn down and the original current coils replaced by current coils with double winding. The meter elements were then reconnected and the meter reassembled. Before complete assembly was made the electromagnetic air gap was spaced to 3/16 inches. Material required for the conversion was four coils per meter.

The cost of rebuilding the meters was between $25 to $30 a meter. A new meter would have cost about $235, while full 3-element type meters would have cost about $300. As a result a saving of between $1,000 and $1,400 was effected.

HYDRO-TITE

A DEPENDABLE JOINTING COMPOUND FOR BELL & SPIGOT WATER MAINS

HYDRO-TITE is a self-caulking sulphur base jointing compound used to joint Bell & Spigot cast iron water mains and soil pipe. It is made in powder form which insures uniformity and quick melting.

For more than 30 years Hydro-Tite has been used by Water Companies and Water Departments everywhere. Hundreds of tons of Hydro-Tite are now being used on strictly war projects under War Department and Navy specifications.

HYDRAULIC DEVELOPMENT CORP.

Main Sales Office:
50 Church Street, New York, N. Y.

General Office & Works:
West Medford Station, Boston, Mass.

Once . . . . an economy and a convenience
Now . . . . a wartime necessity

Ross Automatic Valves

Surge Relief Valves—

Protect **distribution systems against excessive pressures.**

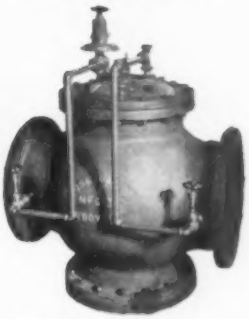
Prevent **over-drafting of a deep well by supplying constant back-pressure.**

Altitude Valves—
Single or double-acting

Prevent **overflow of tanks, standpipe or reservoirs.**

Retain **supply on off-peak loads. Make storage available for peak load periods.**

Control **head during filtering operations.**



Reducing Valves—

Regulate **pressures in either gravity or direct pressure systems.**

Regulate **fire-flows between zones of unequal pressure.**

Regulate **pressure in filter waste lines.**

No distribution system is better than the valves that control it.

Write for literature, catalogs, and details to fit your particular system.

ROSS VALVE MFG. CO., Inc.

P. O. BOX 596 TROY, N. Y.

NOW HARLEY-DAVIDSON *Dependability* COUNTS MORE THAN EVER

MORE than 3600 cities and towns from coast to coast count themselves fortunate in having equipped their traffic and law enforcement departments with Harley-Davidson Police Motorcycles. Now when all new motorcycles are required for our armed forces, these communities are assured maximum performance with minimum maintenance — because their rugged Harley-Davidsons embody the expert engineering, built-in features and quality materials that insure dependable, economical operation *year after year.*

And tomorrow, lessons learned on today's battlefields, will assure police departments still better Harley-Davidson Motorcycles.

HARLEY-DAVIDSON MOTOR CO., Milwaukee, Wis.

HARLEY-DAVIDSON
MOTORCYCLES
ON AMERICA'S FRONT LINES OF ACTION

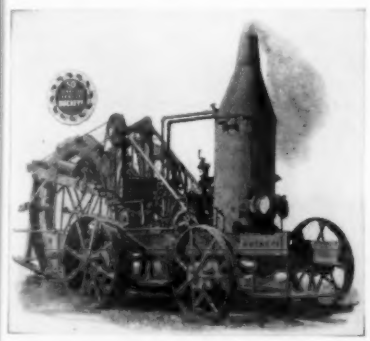
Buckeye Notes Fiftieth Birthday

When the World's Columbian Exposition was preparing to open in Chicago 50 years ago, the first Buckeye ditcher was being completed in a tiny shop in Bowling Green, Ohio. James B. Hill, its designer and builder, thus became the founder of the Buckeye Traction Ditcher Co. of Findlay, Ohio, one of the largest and best-known manufacturers of trenching machinery in the world.

This forerunner of the modern Buckeye ditcher was of wheel type and was built without engineering drawings or designs. All patterns were made of wood and most of them were carved out with a jackknife. This initial ditcher of half a century ago sold for $700 and netted Hill a salary of approximately $3 per day.

In its fifty years of progress, the applications of the Buckeye ditcher have become widely varied. It was originally built for laying drain tiles on farms, but soon demonstrated its value in digging trenches for water distribution mains, sewer lines, and many other purposes. With the growth of cross-country pipe lines, Buckeye came into its own, for here was a job that could be performed in no other way.

Today, Buckeye equipment is playing an important role in the war effort. Buckeye trenchers are widely used in the construction of army camps, ordnance plants, and naval bases; for water, sewage, lighting and similar needs. Essential pipe lines are being laid over hundreds of miles in Buckeye-dug trench. Air bases and other war projects are using Buckeye R-B fine greaders, spreader boxes, bulldozers.



One of the first trenchers built by Buckeye 50 years ago. Contrast this with the model 410 boom type trencher, below, built today.

Mathieson Gets "E"

The Niagara Falls plant of The Mathieson Alkali Works, Inc., 60 East 42nd St., New York, has been presented with the Army-Navy Production Award for high achievement in the production of chemicals vitally needed for the war.

The "E" flag, which symbolizes the award, was presented on February 26 by Col. Harry A. Kuhn, of the Office of the Chief, Chemical Warfare Service, Washington, D. C., and was accepted by G. W. Dolan, executive vice-president of the Mathieson organization.

Mathieson's chemicals are used by the Army for water purification work and have seen service on every front, according to Col. Kuhn. They are also used for the manufacture of explosives and ammunition. A new product, sodium methylate, goes almost entirely into the manufacture of the highly important sulfa drugs.

Pittsburgh-Des Moines Announces Promotions

William R. Jackson has just been named secretary-treasurer of Pittsburgh-Des Moines Steel Co., 3412 Neville Island, Pittsburgh, Pa., according to a recent announcement. He succeeds George A. Smith who is retiring after 45 years of active service. R. J. Jackson has been appointed assistant secretary-treasurer, and A. B. Sanderson has been elected a director.

The power-limiting characteristics of

DE LAVAL PUMPS

permit of selecting the motor size for maximum motor efficiency at the load giving maximum pump efficiency

Also, by reason of their low torque at shut-off, **De Laval Pumps** permit the use of self-starting synchronous motors, which, by improving the power factor, may earn a lower unit power rate.

The aggregate capacity of De Laval pumps installed in American water works is more than sufficient to supply the normal water requirements of 130,000,000 people.

Write for Catalog P-4094

DE LAVAL
Steam Turbine Co.
TRENTON, N.J.

SPARLING
MAIN LINE
WATER METERS

One of the 90 Styles and Sizes of SPARLING Main-Line Meters — for threaded, flanged, bell and spigot, or welded mains.

EASILY INSTALLED

A Sparling Meter—flanged, threaded, bell and spigot—is installed as though it were a length of the pipe itself. All that is required is a straight flow through the propeller, with no air pockets in the meter section.

ACCURACY CONSISTENT

Guaranteed within 2% throughout the rated range, accuracy extends, in the case of Compounds, to ranges of 1 to 120. Head pressure loss is negligible in most cases. All Sparling Meters are complete Totalizing units.

MUNICIPAL • MILITARY • INDUSTRIAL

Bulletin No. 308 will be sent upon request

SPARLING

LOS ANGELES.....Box 3277 Terminal Annex
CHICAGO.....3104 South Michigan Ave.
622 Broadway.....CINCINNATI
101 Park Avenue.....NEW YORK
BOSTON.....6 Beacon Street

How to make it last

Never before have there been so many new "recruits" in offices.

As the boys go off to war or to war production, the girls come in to take over, with a smile on their lips and determination in their hearts to make good on the job.

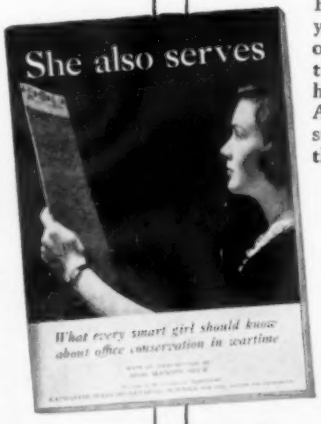
Never before has it been so important to instruct these new recruits in handling and taking care of their weapons—the office appliances that are now almost impossible to replace.

On this page some suggestions are given for taking care of the Mimeograph duplicator and making this indispensable office machine last longer. These suggestions are taken from a new booklet containing valuable information not only on Mimeograph equipment but on other appliances and office supplies as well. Telephone the Mimeograph distributor in your community for free copies —or write direct to A. B. Dick Company, Chicago.

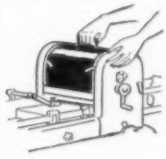
Before you start to type a Mimeograph stencil, make sure the type of your typewriter is spick-and-span, so each letter will make a perfect impression. Then type carefully—to save stencils.

Mistakes will happen—even with the flying fingers of the most expert typist. Don't let it throw you. Just learn to make good corrections on the stencil. It's easy—and it saves plenty of the company's time and money.

When a radio program comes out to the split second, the director signals his cast by placing his finger on his nose. Remember this signal when you order your Mimeograph copies. Order exact number needed to save paper, ink, and running time.



If you're in charge of Mimeograph equipment, make your motto, "Keep it clean!" Wipe away dust every morning. Keep machine properly oiled to prevent friction.



Cover the machine when it is not in use—and be sure it has been "put to bed" when you leave the office at night.

Perhaps the rubber plant at grandmother's isn't priceless—but the rubber parts of the Mimeograph duplicator are difficult to replace. Take care of them —give them a bath with soap and water occasionally.

SEND FOR THIS FREE BOOKLET! Here is what you should know regarding office conservation in wartime, collected into one handy booklet, called "She Also Serves." How to type a stencil, how to take care of the Mimeograph duplicator, what to do when file folders and manila envelopes get scarce, how to save paper and office supplies —lots of other helpful information. Phone the Mimeograph distributor in your community . . . or write to A. B. Dick Company, Chicago, for your free copy.

Mimeograph duplicator

MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

COPYRIGHT 1942, A. B. DICK COMPANY

This Littleford Trail-O-Roller puts the finishing touches on a street patch job at Newport, Ky. The work was executed at the Kentucky end of the L. & N. Bridge crossing the Ohio River from Cincinnati to Newport.

Municipal Accounting Made Easier

Cities foresighted enough to revamp their accounting systems around the use of modern efficient accounting machines are now realizing the benefits of their actions not only in the simplification of the work and accuracy of the reports, but also in regard to saving of valuable manpower, according to reports received by the Burroughs Adding Machine Co., Detroit, Mich.

The recently incorporated city of Rye, N. Y., is a typical example. Information submitted by J. H. Hannon, Comptroller, states that when Rye was a village there was no centralized control, and assessment rolls and tax bills were either handwritten or typed, with expenditures of the various departments charged to budget appropriations once a month.

Burroughs tax-computing machines now simplify that, states Mr. Hannon. Tax payments are posted by the machines which also write purchase orders and checks. They also perform all accounting operations of the city. This has eliminated involved and complicated bookkeeping requiring many man hours of work. The city now knows how its expenses stand at any time and is able to accommodate without difficulty the numerous government accounting requirements, such as payroll deductions and Victory taxes.

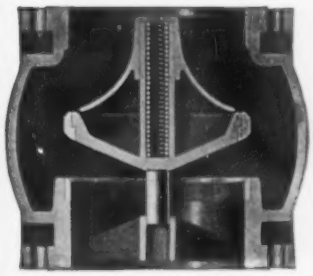
Essential Steel Available for 1943

There will be no scarcity of steel products for either the war program or the most essential civilian requirements during 1943. This is the opinion of Mr. Eugene G. Grace, President of Bethlehem Steel Co., Bethlehem, Pa., quoted in the January 29 issue of *New York Herald Tribune*.

According to Mr. Grace, the industry now is beyond the danger of production difficulty growing out of shortages of basic material such as scrap and pig iron. He believes that the industry's scheduled available capacity of 97,000,000 net tons of ingots will meet both the war program and the most essential civilian requirements.

SMOLENSKY

VALVES



■ The Smolensky Radialflow Noiseless Check Valve eliminates friction head loss, which assures operating efficiency and noiseless operation.

Designed to be constructed with a cast iron body, plug, spider, and made with a renewal bronze valve seat or seat of other metal when required.

Specify Smolensky Valves for your water works plant and assure yourself years of trouble-free service.

•

Economy—Durability

THE SMOLENSKY VALVE CO.

1931 W. 47th STREET, CLEVELAND, OHIO

ARMY TWILL BY REEVES SANFORIZED* MADE TO GOVERNMENT SPECIFICATIONS REG. U.S. PAT. OFF.

REEVES Glengarrie POPLIN

Demand these labels when buying uniforms

UNIFORMS OF REEVES ARMY TWILL CAN TAKE IT!

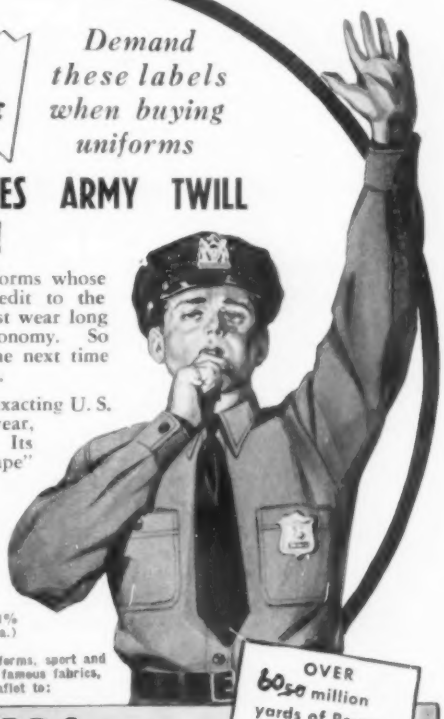
The "City's Finest" require uniforms whose neat, trim appearance are a credit to the Force and to the City. They must wear long and well for the utmost economy. So specify *Reeves* famous fabrics the next time you are ordering *your* uniforms.

REEVES ARMY TWILL meets exacting U. S. Government Tests for better wear, longer life, and color-fastness. Its fabric vitality keeps it "in shape" under trying conditions.

For matching shirts, specify GLENGARRIE POPLIN, a durable, stylish fabric in a wide range of colors. Both fabrics are Sanforized* against shrinking.

*Fabric shrinkage not more than 1% (U. S. Government Test CCC-T-191-a.)

See your nearest dealer for uniforms, sport and work clothes made from these famous fabrics, or write for colorful leaflet to:



OVER 6050 million yards of Reeves Army Twill sold to the U. S. Army

REEVES BROTHERS, INC.

54 WORTH STREET NEW YORK CITY

Owing to the character of the information contained in this portfolio, it is not for general distribution. It is available for review, through local Burroughs offices, to industrial and government officials directly concerned with war accounting problems.

"...a real contribution"

Long before Pearl Harbor, Burroughs technical systems and installation men were working with ordnance plants and war industries—with Army, Navy and government officials—to help them with their war accounting problems. As a result of the thoroughness and the outstanding work of these men, this Burroughs war accounting portfolio contains, we believe, the most detailed, comprehensive information yet compiled on methods and machines being used to handle practically every accounting procedure essential to the war effort.

BURROUGHS ADDING MACHINE COMPANY
DETROIT, MICHIGAN

MANUFACTURING FOR WAR

The manufacture of aircraft equipment for the Army Air Forces, and the manufacture of Burroughs figuring and accounting equipment for the Army, Navy, U. S. Government and the nation's many war activities, are the vital tasks assigned to Burroughs in the Victory Program.

Burroughs

W. McKean White, Jr., Air Corps Lieutenant

W. McKean White, Jr., vice-president of the White Mfg. Co., Elkhart, Ind., has been given a leave of absence and is now a Second Lieutenant in the U. S. Army Air Corps. At present he is stationed at Wendover Field, Utah, as Assistant Supply and Engineering Officer of the 384th Bombardment Group.

Merritt A. King has joined the White Mfg. Company as assistant to the president, W. McK. White, and will assume many of Lt. White, Jr.'s duties.

According to Mr. White, this company is now devoting its work entirely to war production. It is well known in the municipal field for its asphalt plants, asphalt surface heaters, tar kettles, asphalt heating kettles, pavement repair equipment, concrete vibrators, grinders, and traffic-line markers.

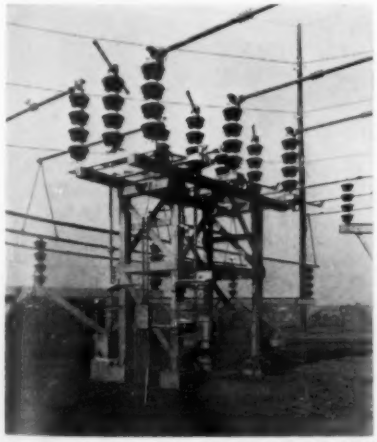
Treated Wood Substation a Permanent Installation

The new treated wood substation, built by the Public Service Electric and Gas Co. of New Jersey and saving nearly 40 tons of critical steel, gives a guide to municipal power operators on the way this material can be used efficiently in permanent substation installations.

This structure, made chiefly from prefabricated lumber in order to simplify assembly, consists of two outdoor substations. In one of these, a 132-kv section, the steel supports for switches and buses have been entirely replaced with wood; in the second, a 26-kv section, wood beams have been used in connection with steel columns.

Long-leaf yellow pine was used throughout. The structure was detailed in the same careful manner that is used for a steel frame, and the material is cut to length and given a pressure treatment with Wolman Salts preservative. Holes in the wood were drilled in the field and swashed with a preservative solution.

The design loadings used in the layouts of the members were similar to those of structures ordinarily built of steel The structure is considered permanent.



A close-up of a portion of the new treated wood substation.

Beating the Problem of Pipe "Sweating"

If the condensation of moisture in your plant is a problem, the new free handbook issued by the J. W. Mortell Co., Kankakee, Ill., may help. This 32-page booklet tells about the plastic cork coating that acts as an aid in preserving pipe and other metal equipment by preventing rust and corrosion.

This product, knowns as NoDrip, is a triple-duty, insulation-type coating in plastic form that can be used effectively in the atmospheric temperature range of 0° F. to 130°. It prevents condensation drip from metal, concrete, brick, wood, plaster, or composition surfaces where the condensation is due to a difference in temperatures between the surface to be treated and the adjacent air.

The material acts as a moisture-proof insulation. It forms a sealed jacket without seams or joints, which distinguishes it from conventional thermal insulations used to prevent pipe sweating.

Manufacturers Association Changes Office

On March first the Water and Sewage Works Manufacturers Association, Inc., changed its location to 12 E. 41st St., New York, according to an announcement by Arthur T. Clark, secretary-manager. This association formerly was located at 22 E. 40th St.

For CIVILIAN DEFENSE

VALVES
HYDRANTS

Experience indicates that more damage is done in an enemy air raid by incendiary bombs than by demolition bombs. City officials and water-works operators are striving for maximum fire protection by increased installation of fire hydrants and valves. Adequate valve installation may also prevent stopping operation of war material factories in case a water main is broken by a bomb.

M & H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

89 years
of progressive storage tank engineering!
Established in 1854, the R. D. Cole Mfg. Co. has long been recognized as one of the nation's outstanding tank builders. With 89 years of "progressive storage tank experience" at your disposal, we shall welcome the opportunity to serve your tank needs.

All shapes and sizes

We have developed a complete line of elevated steel tanks for water supply, both for domestic service, and sprinkler requirements, ranging in capacity from 5,000 to 2,000,000 gallons. The designs include the standard Hemi-spherical and Self-supporting bottom, the "Cole Ovaloid," Standpipe, and many individual styles.

Storage Tanks

We also make pressure tanks for storage of gas from digestors at sewage disposal plants so that excess output at peak loads can be used during off-peak periods. Also chemical storage tanks, hot water storage tanks, tanks for bulk storage of oils and gas.

Write for "Tank Talk"—No. 15A

R.D.COLE MFG.CO.
Established in 1854
NEWNAN···GEORGIA

Taxpayers' Friend

TAXPAYERS save money every time this installation pumps 1000 gallons through their waterworks system. The pumps are Gardner-Denver Double-Suction Horizontally Split Case Centrifugals.

They're truly modern centrifugal pumps —designed with *proved* hydraulic and mechanical features that increase pump efficiency and lower power costs. For durability and long life, the casings, impellers and other vital parts are cast of GarDurloy —the modern high strength cast iron developed by Gardner-Denver metallurgists.

Available in a wide range of capacities for heads up to 350 feet, these pumps are adaptable to any type of drive.

Full specifications will be sent on request. Gardner-Denver Company, Quincy, Ill.

GARDNER-DENVER *Since 1859*

Mack Trucks Name New Executives

Louis G. Bissell has been elected chairman of the board of directors for Mack Trucks, Inc., Long Island City, N. Y. Also announced was the election of Charles T. Ruhf as President of Mack Mfg. Corp., and executive vice-president of the parent company Mack Trucks, Inc.

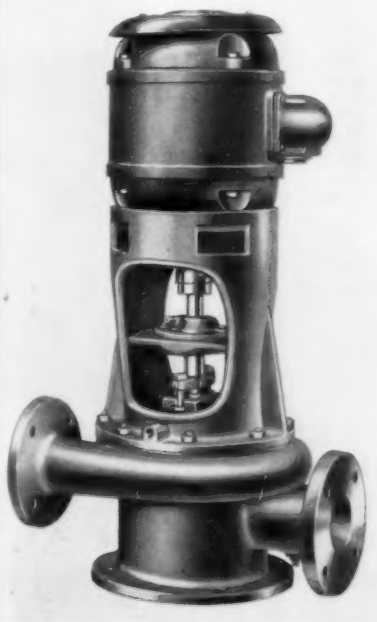
Mr. Bissell, a member of the law firm of Chadbourne, Wallace, Park and Whiteside, has served the company for many years as a director and counsel.

Mr. Ruhf was formerly operating vice-president in charge of factories and has been with the company since 1912. In 1920 he was appointed assistant to the factory manager of the Allentown plant, in which position he served until he was appointed factory manager in 1937. In 1938 he was made operating vice-president of Mack Mfg. Corp. and Mack Trucks, Inc.

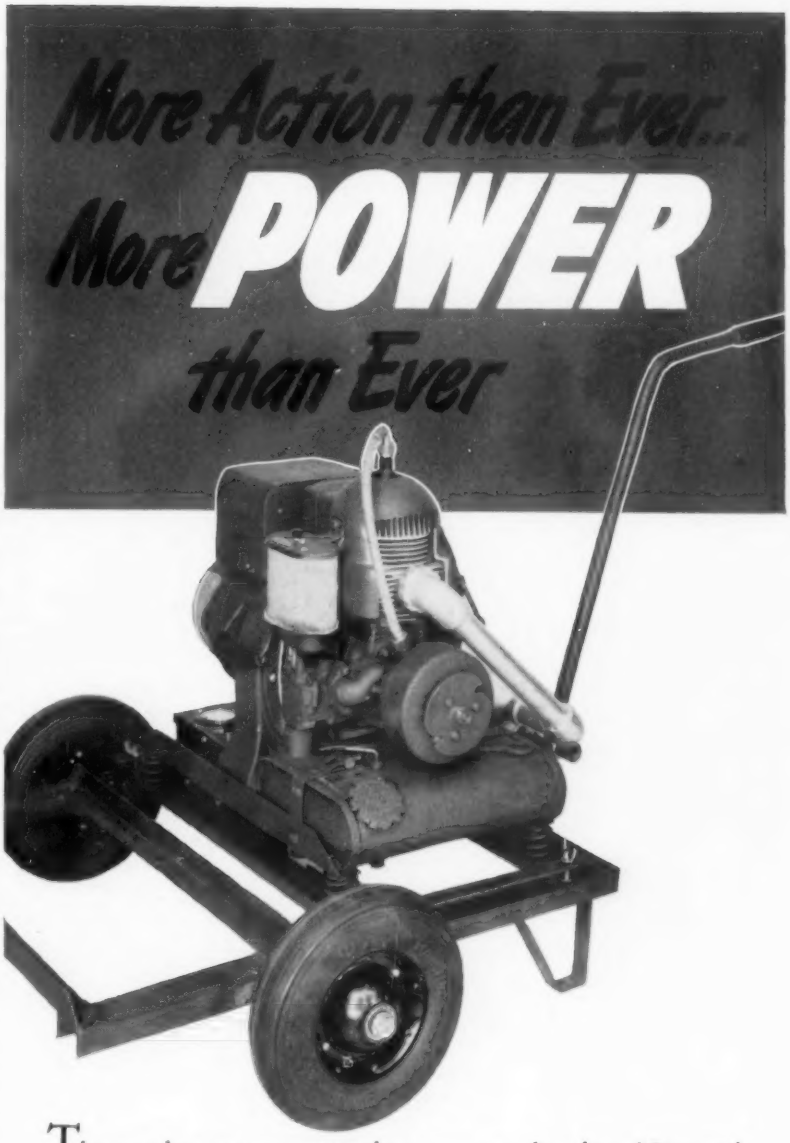
New Single Suction Pump

A new type of single suction pump has been developed by Economy Pumps, Inc., Hamilton, Ohio, designed to fit the requirements of the medium-priced class. It has many new features not found in the conventional type of horizontal side suction pumps, close coupled pumps, or horizontal-type double suction in sizes where the service intended is identical.

Modern in design and construction, the manufacturer offers in this new pump economy in installation cost, floor space requirements, and operation. Lubrication has been simplified and connections have been provided in the pump cover stand for the drainage of the packing gland seepage.



The new SCV single-suction pump made by Economy Pumps, Inc., Hamilton, Ohio



The war has got us more than ever on the alert. New and better Homelite Generators—more portable, more powerful than ever—are daily rolling off our assembly line and going direct to our Armed Forces.

In design, in performance, and in the number of different units, Homelite has made tremendous forward strides. It doesn't mean much to you now—but after the war, your new Homelite Portable Pumps and Generators will be better performers than ever before.

★ ★ ★

Homelite workers have done their job well enough to earn the Army-Navy E—a good indication that they'll do their job well enough to meet your demands when peace is finally declared.

HOMELITE CORPORATION
PORT CHESTER, NEW YORK

"the Municipal Index is a big aid in the making of purchases"

SAY *Municipal Buyers—*

CITY OF BOSTON

PARK DEPARTMENT

33 BEACON STREET
BOSTON

February 13, 1943

George S. Conover, Vice-President
The Municipal Index - American City Magazine
470 Fourth Avenue, New York

Dear Mr. Conover:

I appreciate your Municipal Index which you have been furnishing this department for a number of years. We get a great deal of information from it and it assists us materially in a number of ways. It has assisted us in so many different purchases over a period of years, I could not begin to catalogue them.

Please be assured, I appreciate your courtesy -

Gratefully yours,

William P. Long
Chairman

CITY OF ASBURY PARK

ASBURY PARK, NEW JERSEY

February 11, 1943

OFFICE OF THE MAYOR
CLARENCE V. MOONEY

The Municipal Index
470 Fourth Avenue
New York, N.Y.

Gentlemen:

This is to advise you that a Municipal Index has been used by a number of the department heads in our City in obtaining various equipment and material for the successful operation of their department.

Thank you for the 1943 edition and trust that you will place my name on the list for the 1944 issue.

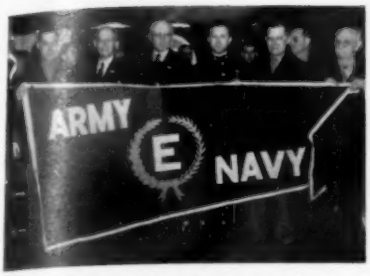
Very truly yours,

Clarence V. Mooney,
Mayor

CVM/AP
Enc.

THE MUNICIPAL INDEX *is*
The Modern Reference Library that covers the $500,000,000 worth of products which city governments purchase.

THE MUNICIPAL INDEX is published yearly by
AMERICAN CITY MAGAZINE CORPORATION, 470 FOURTH AVENUE, NEW YORK



The civilians holding the Army-Navy "E" awarded to Wallace & Tiernan are Charles F. Wallace, vice-president; Martin F. Tiernan, president; James Mills who represented the employees.

Army-Navy "E" to Two W&T Companies

One of the few occasions on which two Army-Navy "E" awards have been made jointly to the men and women of two associated companies took place Monday afternoon, January 25, at the plant of Wallace & Tiernan Co., Inc., and Wallace & Tiernan Products Inc., Mill and Main Streets, Belleville, N. J.

Col. J. E. Seybold, Chief of Procurement Section, Office of the Chief of Engineers, Washington, D. C., made the award to the employees of Wallace & Tiernan Co., Inc., for excellence in production. At the same ceremony, Col. Harry A. Kuhn, Chief, Control Division of the Chemical Warfare Service, conferred a similar honor on the men and women of Wallace & Tiernan Products, Inc. On behalf of the Navy, Lt. Col. C. H. Shuey of the U. S. Marine Corps presented to management and employee representatives the E lapel insignia emblematic of the award.

Controlling Corrosion by Water or Steam

The ability of Rustbuster, developed by Cannon Chemical Co., Inc., 210 Broadway, Everett, Mass., to combat rust or corrosion in water and steam lines is cleverly demonstrated by the small test kit furnished by this company. This kit contains two small vials, each with a small amount of steel wool and a small vial containing the corrosion-resisting fluid. By filling both larger vials almost to the top with tap water, adding to one of them a small amount of Rustbuster, and leaving them uncapped overnight, the resulting action will indicate the effectiveness of this newly developed protective solution.

This product, the manufacturer asserts, is particularly useful in steam plant work. It remains in the steam as it returns to be condensed and offsets the action of carbon dioxide or free oxygen that may be present. This prevents the formation of corrosion throughout the mains, risers, or any other major parts of the system as well as in the return lines.

The product also is useful in diesel power work in regard to the treating of the jacket water. Applications in any case should vary from 50 to 100 ppm to be effective.

METER BOX COVERS

Ford Meter Box Covers are made in a variety of types and sizes for all conditions. Double-lid covers have air-space insulation and sloping skirts which cut down heat loss to a minimum. Single-lid covers have overlapping lids or inset lids; are made in several depths and lid sizes. Ford Covers are well made to give a lifetime of satisfaction. All have the exclusive Lifter Worm Lock which has been proved in service. A million Ford Covers are in use. Learn more about Ford Meter Box Covers by writing for our catalog.

FORD METER BOX CO.
WABASH, IND.

INSTALLATIONS WORLD WIDE
LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS
LATEST "COREY TYPE" HYDRANTS

Write for Catalogue and Information
IOWA VALVE CO.
General Offices:
Hubbell Bldg., Des Moines, Iowa
Plant:
Oskaloosa, Iowa

Welcome . . .
to PITTSBURGH'S NEWEST HOTEL

★

The HOTEL PITTSBURGHER
"Popular with War-Busy Officials"

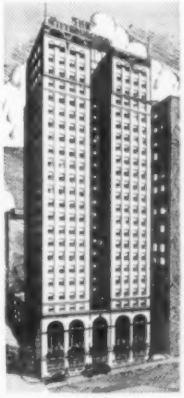
★

400 rooms, all with outside view and bath. Radio in every room.

★

Rates
SINGLES
$3.30 to $4.40
DOUBLES
$5.00 to $6.50

★



Most Conveniently Located Hotel in Downtown Pittsburgh

The HOTEL PITTSBURGHER
A KNOTT HOTEL
Joseph F. Duddy, Manager

The American City Professional Service Directory

ALBRIGHT & FRIEL, INC.
Consulting Engineers
Water, Sewerage, Garbage and Valuation Problems
1520 Locust St.
Philadelphia, Penna.

BAKER & WHEELER
36 State Street — Albany, N. Y.
11 Park Place — New York City
Water Supply, Sewerage, Sewage Disposal, Public Utility and Industrial Valuations, and Rates, Power

JAMES M. CAIRD
Assoc. Am. Soc. C.E.
CHEMIST and BACTERIOLOGIST
OFFICE AND LABORATORY
Cannon Building, Troy, N. Y.
Water Analysis and Tests of Filter Plants

SAMUEL M. ELLSWORTH
M. Am. Soc. C. E.
Consulting Engineer
Water Supply and Purification, Sewerage and Sewage Treatment, Municipal and Industrial Wastes Disposal
6 Beacon St. — Boston, Mass.

ALVORD, BURDICK & HOWSON
John W. Alvord — Chas. B. Burdick
Donald H. Maxwell — Louis R. Howson
Water Works, Water Purification, Flood Relief, Sewerage — Sewage Disposal, Drainage, Appraisals, Power Generation
CIVIC OPERA BLDG., CHICAGO, ILL.

BLACK & VEATCH
Consulting Engineers
Sewerage, Sewage Disposal, Water Supply, Water Purification, Electric Lighting, Power Plants, Valuations, Special Investigations and Reports.
4706 Broadway, Kansas City, Mo.

Campbell, Davis & Bankson
The Chester Engineers
Water Supply and Purification, Sewerage and Sewage Treatment, Power Development and Applications, Valuations and Rates.
210 Parkway at Sandusky St., Pittsburgh, Pa.

FAY, SPOFFORD AND THORNDIKE
Consulting Engineers
Port Development — Bridges — Water Supply — Drainage—Sewerage—Fire Prevention
11 Beacon St. — Boston

The American Public Utilities Bureau
Organized to assist municipalities and public groups in utility valuations, rates, franchises, accounting and surveys.
John Bauer, Ph.D., Director
280 Broadway — New York City

BUCK, SEIFERT AND JOST
Consulting Engineers
(Formerly Nicholas S. Hill Associates)
Water Supply, Sewage Disposal, Hydraulic Developments, Valuations and Reports, Chemical and Biological Laboratories.
112 East 19th Street — New York City

WILLIAM R. CONARD
BURLINGTON, N. J.
Inspections and Tests of Materials, Reports, Appraisals, Designs, Specifications.

THE WILLIAM T. FIELD ENGINEERS, INC.
Consulting Engineers
William T. Field — Arthur H. Emerson
Sewerage Systems and Treatment, Water Supply and Purification, Investigations, Appraisals, Design, Supervision, Laboratory
Flower Bldg. — Watertown, N. Y.

E. T. ARCHER & CO.
Consulting Engineers
Steam and Hydraulic Power Plants, Water, Sewerage, Paving, Roads, Appraisals, Testimony, Reports
New England Bldg., Kansas City, Mo. — City Bank Bldg., Shreveport, La.

BURGESS & NIPLE
Philip Burgess — Chester A. Niple
T. C. Kussmaul — Earl S. Hoyt
Ben K. Bare — Clayton C. Bull
Waterworks, Purification, Sewerage, Sewage Treatment, Valuations
568 E. Broad St., Columbus, O.

Consoer, Townsend & Quinlan
Water Supply—Sewerage—Flood Control and Drainage—Bridges—Ornamental Street Lighting—Paving—Light and Power Plants, Appraisals.
211 W. Wacker Drive — Chicago

WALTER H. FLOOD & CO.
Chemical Engineers
Paving and Engineering Materials — Inspections — Reports—Specifications—Physical and Chemical Tests — Design and Control of Asphalt and Concrete Mixtures.
822 E. 42nd St. — Chicago, Ill.

MICHAEL BAKER, JR.
The Baker Engineers
Civil Engineers & Surveyors
Municipal Engineers
Airport and Water Works Design
Sewage Design and Operation
Surveys and Maps of Large Areas
Home Office, Rochester, Pa.

Burns & McDonnell Engr. Co.
Consulting Engineers Since 1897
Waterworks, Light and Power, Sewerage, Reports, Designs, Appraisals, Rate Investigations
Kansas City, Mo. 107 W. Linwood Blvd.

ROBERT HALL CRAIG
Consulting Engineer
Municipal Problems
Utility Rates—Town Planning—Water and Sewage Systems—Economic Surveys.
HARRISBURG, PENNSYLVANIA

FORD, BACON & DAVIS, Inc.
Engineers
DESIGN · CONSTRUCTION
VALUATIONS · REPORTS
New York, Chicago, Philadelphia
Galveston — Washington

METCALF & EDDY
Engineers
Water, Sewage, Drainage, Garbage and Industrial Wastes Problems
Laboratory, Valuations
STATLER BUILDING, Boston — 150 BROADWAY, New York

WILLIAM A. GOFF
Consulting Engineer
Private and Municipal Engineering
Sewerage, Sewage Disposal
Water Supply and Treatment
Garbage, Refuse, Industrial Wastes
Design, Supervision, Valuations, Reports
Broad St. Station Bldg., Philadelphia

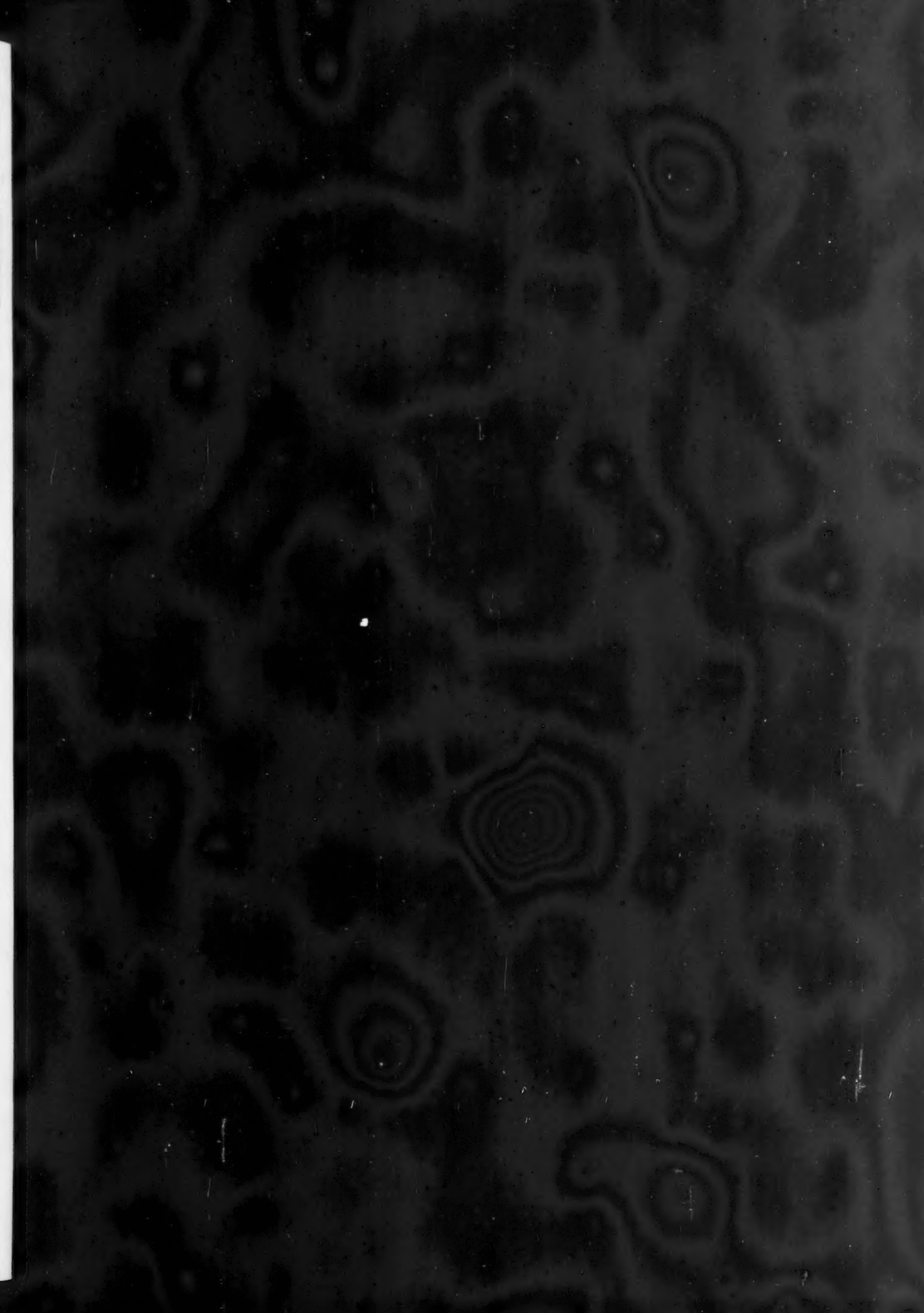
THE PITOMETER COMPANY
Engineers
Water Waste Surveys — ***Trunk Main Surveys*** — ***Water Distribution Studies***
Penstock Gaugings
52 Church Street — New York

J. W. Goodwin Engineering Co.
Municipal & Consulting Engineers
Design and Construction Supervision.
Air Ports, Waterworks, Sewerage, Sewage Treatment, Water Treatment, Gas Systems, Street Improvements, Reports, Appraisals
Birmingham, Alabama

THE J. M. CLEMINSHAW COMPANY
APPRAISALS—REVALUATIONS
Specializing in the revaluation of municipalities for local tax purposes.
Illustrated brochure and moving picture film upon request
CLEVELAND — NEW YORK

"WHO'S WHO"
City Departments can depend upon this Directory as a thoroughly reliable "Who's Who Among Consulting Engineers Specializing in Municipal Work."

ELECTRICAL TESTING LABORATORIES, INC.
Electrical and General Testing—Inspections—Research—Certification
2 EAST END AVENUE AT 79th STREET, NEW YORK, N. Y.
BUtterfield 8-2600

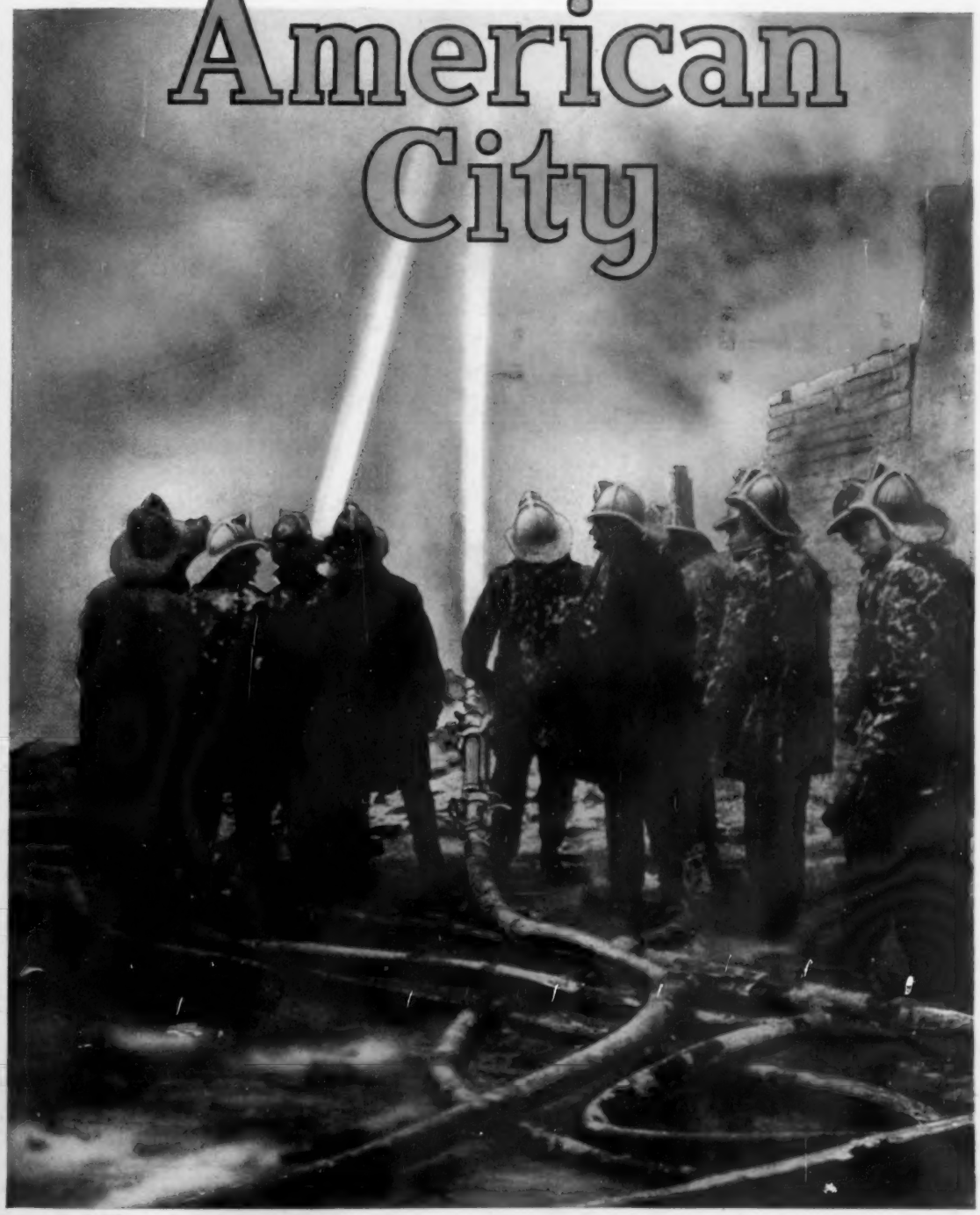


APR 12 1943

DICAL
AL LIB
OF MIC

The American City

APRIL, 1943



Air-raid-ready Philadelphia firemen tackle recent "8-alarm" fire (see pages 60-61)